The Port Folio.

BY OLIVER OLDSCHOOL, ESQ.

VARIOUS; that the mind
Of desultory man, studious of change,
And pleased with novelty, may be indulged.—COWPER.

For the Port Folio.

THE PASSENGER PIGEON—COLUMBA MIGRATORIA.

[With a Coloured Engraving.]

CATESB. I, 23.—LINN. SYST. 285.—TURTON, 479.—*Arct. Zool.* p. 322, No. 187.—BRISSON, I, 100.—BUFF. II, 527. PEALE'S *Museum*, No. 5084.

FROM WILSON'S ORNITHOLOGY.

THIS remarkable bird merits a distinguished place in the annals of our feathered tribes; a claim to which I shall endeavour to do justice; and though it would be impossible, in the bounds allotted to this account to relate all that I have seen and heard of this species, yet no circumstance shall be omitted with which I am acquainted, however extraordinary some of these may appear, that may tend to illustrate its history.

The Wild Pigeon of the United States, inhabits a wide and extensive region of North America, on this side of the Great Stony Mountains, beyond which, to the westward, I have not heard of one being seen. According to Mr. Hutchins, they abound in the country round Hudson's Bay, where they usually remain as late as December, feeding, when the ground is covered with snow, on the buds of juniper. They are spread over the whole of Canada, were seen by captain Lewis and his party near the Great Falls of the Missouri, upwards of 2500 miles from its mouth, reckoning the meanderings of the river—were also met with in the interior of Louisiana, by Col. Pike, and extend their range as far South as the gulf of Mexico; occasionally visiting or breeding in almost every quarter of the United States.

But the most remarkable characteristic of these birds is their associating together, both in their migrations and also during the period of incubation, in such prodigious numbers as almost to pass belief: a circumstance which has no parallel among any other of the feathered tribes, on the face of the earth, with which naturalists are acquainted.

These migrations appear to be undertaken rather in quest of food, than merely to avoid the cold of the climate; because we find them lingering in the northern regions around Hudson's Bay so late as December; and because their appearance is so casual and irregular, sometimes not visiting certain districts for several years in any considerable numbers, while at other times they are innumerable. I have witnessed these migrations in the Gennessee country—often in Pennsylvania, and also in various parts of Virginia, with amazement; but all that I had then seen of them were mere straggling parties, when compared with the congregated millions which I have since beheld in our western forests, in the states of Ohio, Kentucky, and the Indiana territory. These fertile and extensive regions abound with the nutritious beech nut, which constitutes the chief food of the Wild Pigeon. In seasons when these nuts are abundant, corresponding multitudes of Pigeons may be confidently expected. It sometime happens that having consumed the whole produce of the beech trees in an extensive district, they discover another at the distance, perhaps, of sixty or eighty miles, to which they regularly repair every morning, and return as regularly in the course of the day, or in the evening, to their place of general rendezvous, or, as it is usually called, *the roosting place.* These roosting places are always in the woods, and sometimes occupy a large extent of forest. When they have frequented one of these places for some time the appearance it exhibits is surprising. The ground is covered to the depth of several inches with their excrement; all the tender grass and underwood is destroyed; the surface strewed with large limbs of trees broken off by the weight of the birds clustering one above another; and the trees themselves, for thousands of acres, killed as completely, as if girdled with an axe. The marks of this desolation remain for many years on the spot; and numerous places could be pointed out where, for several years after, scarce a single vegetable made its appearance.

When these roosts are first discovered, the inhabitants from considerable distances visit them in the night, with guns, clubs, long poles, pots of sulphur, and various other engines of destruction. In a few hours they fill many sacks

and load their horses with them. By the Indians a Pigeon roost, or breeding place, is considered an important source of national profit and dependence for that season; and all their active ingenuity is exercised on the occasion. The *breeding place* differs from the former in its greater extent. In the western countries above mentioned, these are generally in beechwoods, and often extend in nearly a straight line, across the country for a great way. Not far from Shelbyville, in the state of Kentucky, about five years ago,* there was one of these breeding places, which stretched through the woods in nearly a north and south direction; was several miles in breadth, and was said to be upwards of forty miles in extent! In this tract almost every tree was furnished with nests wherever the branches could accommodate them. The Pigeons made their first appearance there about the tenth of April, and left it altogether, with their young, before the twenty-fifth of May.

As soon as the young were fully grown, and before they left their nests, large parties of the inhabitants, from all parts of the adjacent country, came with wagons, axes, beds, and cooking utensils, many of them accompanied by the greater part of their families, and encamped for several days at this immense nursery. Several of them informed me, that the noise in the woods was so great as to terrify their horses, and that it was difficult for one person to hear another speak without bawling in his ear. The ground was strewed with limbs of trees, eggs, and young squab Pigeons, which had been precipitated from above, and on which herds of hogs were fattening. Hawks, Buzzards, and Eagles, were sailing about in great numbers, and seizing the squabs from their nests at pleasure; while from twenty feet upwards to the tops of the trees, the view through the woods presented a perpetual tumult of crowding and fluttering multitudes of pigeons, their wings roaring like thunder; mingled with the frequent crash of falling timber; for now the axe-men were at work cutting down those trees that seemed to be most crowded with nests, and contriving to fell them in such a manner, that in their descent they might bring down several others. By this means the falling of one large tree sometimes produced two hundred squabs, little inferior in size to the old ones, and almost one mass of fat. On some single trees upwards of one hundred nests were found, each containing *one* young

* The Author's preface is dated February, 1812. Ed. P. F.

only, a circumstance in the history of this bird not generally known to naturalists. It was dangerous to walk under these flying and fluttering millions, from the frequent fall of large branches, broken down by the weight of the multitudes above, and which, in their descent, often destroyed numbers of the birds themselves; while the clothes of those engaged in traversing the woods were completely covered with the excrement of the Pigeons.

These circumstances were related to me by many of the most respectable persons in that quarter; and confirmed in part by what I myself witnessed. I passed for several miles through this same breeding place, where every tree was spotted with nests, the remains of those above described.—In many instances I counted upwards of ninety nests on a single tree; but the Pigeons had abandoned this place for another, sixty or eighty miles off, towards Green river, where they were said at that time to be equally numerous. From the great numbers that were constantly passing over head to or from that quarter, I had no doubt of the truth of this statement. The mast had been chiefly consumed in Kentucky, and the Pigeons, every morning, a little before sunrise, set out for the Indiana territory, the nearest part of which was about sixty miles distant. Many of these returned before ten o'clock, and the great body generally appeared on their return a little after noon.

I had left the public road to visit the remains of the breeding place near Shelbyville, and was traversing the woods with my gun, on my way to Frankfort, when, about one o'clock, the Pigeons, which I had observed flying the greater part of the morning, northernly, began to return in such numbers as I never before had witnessed. Coming to an opening by the side of a creek, called the Benson, where I had a more uninterrupted view, I was astonished at their appearance. They were flying with great steadiness and rapidity, at a height beyond gunshot, in several strata deep, and so close together that could shot have reached them, one discharge could not have failed to bring down several individuals. From right to left as far as the eye could reach, the breadth of this vast procession extended; seeming every where equally crowded. Curious to determine how long this appearance would continue, I took out my watch to note the time, and sat down to observe them. It was then half past one. I sate for more than an hour, but instead of a diminution of this prodigious procession, it seemed rather to increase, both in numbers and rapidity; and being anxious

to reach Frankfort before night, I rose and went on. About four o'clock in the afternoon I crossed the Kentucky river, at the town of Frankfort, at which time the living torrent above my head appeared as numerous and as extensive as ever. Long after this I observed them, in large bodies, that continued to pass for six or eight minutes; and these again were followed by other detached bodies, all moving in the same south-east direction till after six in the evening.—The great breadth of front which this mighty multitude preserved would seem to intimate a corresponding breadth of their breeding place, which, by several gentlemen who had lately passed through part of it, was stated to me at *several* miles. It was said to be in Green county, and that the young began to fly about the middle of March. On the 17th of April, forty-nine miles beyond Danville, and not far from Green river, I crossed this same breeding place, where the nests, for more than three miles, spotted every tree; the leaves not being yet out I had a fair prospect of them, and was really astonished at their numbers. A few bodies of Pigeons lingered yet in different parts of the woods, the roaring of whose wings were heard in various quarters around me.

All accounts agree in stating, that each nest contains only one young squab. These are so extremely fat, that the Indians, and many of the whites, are accustomed to melt down the fat for domestic purposes as a substitute for butter and lard. At the time they leave the nest they are nearly as heavy as the old ones; but become much leaner after they are turned out to shift for themselves.

It is universally asserted in the western countries that the Pigeons, though they have only one young at a time, breed thrice and sometimes four times in the same season. The circumstances already mentioned render this highly probable. It is also worthy of observation, that this takes place during the period when acorns, beech nuts, &c. are scattered about in the greatest abundance and mellowed by the frost. But they are not confined to these alone; buckwheat, hempseed, Indian corn, holly berries, hack berries, whortle berries, and many others furnish them with abundance at almost all seasons. The acorns of the live-oak are also eagerly sought after by these birds, and rice has been frequently found in individuals killed, many hundred miles to the northward of the nearest rice plantation. The vast quantity of mast which these multitudes consume is a serious loss to the bears, pigs, squirrels, and other dependents on the fruits of the forest.

I have taken from the crop of a single Wild Pigeon, a good handful of the kernels of beech nuts, intermixed with acorns, and chestnuts. To form a rough estimate of the daily consumption of one of these immense flocks, let us first attempt to calculate the numbers of that above mentioned as seen in passing between Frankfort and the Indiana territory. If we suppose this column to have been one mile in breadth,—and I believe it to have been much more,—and that it moved at the rate of one mile in a minute,—four hours,—the time it continued passing would make its whole length two hundred and forty miles. Again, supposing that each square yard of this moving body comprehended three Pigeons, the square yards in the whole space multiplied by three, would give two thousand two hundred and thirty millions, two hundred and seventy-two thousand pigeons! an almost inconceivable multitude, and yet probably far below the actual amount.—Computing each of these to consume half a pint of mast daily, the whole quantity, at this rate, would equal seventeen millions, four hundred and twenty-four thousand bushels per day! Heaven has wisely and graciously given to these birds rapidity of flight and a disposition to range over vast uncultivated tracts of the earth, otherwise they must have perished in the district where they resided, or devoured the whole productions of agriculture as well as those of the forest.

A few observations on the mode of flight of these birds must not be omitted. The appearance of large bodies of them in the air, and the various evolutions which they display, are strikingly picturesque and interesting. In descending the Ohio by myself, in the month of February, I often rested on my oars, to contemplate their aërial manœuvres. A column, eight or ten miles in length, would appear from Kentucky, high in air, steering across to Indiana. The leaders of this great body would sometimes gradually vary their course, until it formed a large bend of more than a mile in diameter, those behind tracing the exact route of their predecessors. This would continue sometimes long after both extremities were beyond the reach of sight; so that the whole with its glittery undulations, marked a space in the face of the heavens resembling the windings of a vast and majestic river. When this bend became very great, the birds, as if sensible of the unnecessarily circuitous course they were taking, suddenly changed their direction, so that what was in column before became an immense front, straightening all its indentures, until it swept the heavens in one vast and infinitely extended line. Other lesser bodies also united

with each other, as they happened to approach, with such ease and elegance of evolutions, forming new figures, and varying these, as they united or separated, that I was never tired of contemplating them. Sometimes a hawk would make a sweep on a particular part of the column, from a great height, when, almost as quick as lightning, that part shot downwards out of the common track; but soon rising again, continued advancing at the same height as before; this inflection was continued by those behind, who, on arriving at this point, dived down, almost perpendicularly, to a great depth, and, rising, followed the exact path of those that went before. As these vast bodies passed over the river near me, the surface of the water, which before was smooth as glass, appeared marked with innumerable dimples, occasioned by the dropping of their dirt, resembling the commencement of a shower of large drops of rain or hail.

Happening to go ashore one charming afternoon, to purchase some milk at a house that stood near the river, and while talking with the people within doors, I was suddenly struck with astonishment by a loud rushing roar, succeeded by instant darkness, which, at the first moment, I took for a tornado about to overwhelm the house and every thing around in destruction. The people, observing my surprise, said, coolly, "it is only the pigeons," and on running out, I beheld a flock, thirty or forty yards in width, sweeping along very low, between the house and the mountain or height that formed the second bank of the river. These continued passing for more than a quarter of an hour, and at length varied their bearing so as to pass over the mountain, behind which they disappeared before the rear came up.

In the Atlantic States, though they never appear in such unparalleled multitudes, they are sometimes very numerous; and great havoc is then made amongst them with the gun, the clap-net, and various other implements of destruction. As soon as it is ascertained in a town that the Pigeons are flying numerously in the neighbourhood, the gunners rise *en masse;* the clap-nets are spread out on suitable situations, commonly on an open height in an old buckwheat field; four or five live Pigeons, with their eyelids sewed up, are fastened on a moveable stick; a small hut of branches is fitted up for the fowler at the distance of forty or fifty yards; by the pulling of a string, the stick on which the pigeons rest is alternately elevated or depressed, which produces a fluttering of their wings similar to that of birds just alighting; this being perceived by the passing flocks, they descend with great

rapidity, and finding corn, buckwheat, &c. strewed about, they begin to feed, and are instantly, by the pulling of a cord, covered by the net. In this manner ten, twenty, and even thirty dozen have been caught at one swoop. Meantime the air is darkened with large bodies of them moving in various directions; the woods also swarm with them in search of acorns; and the thundering of musketry is continual on all sides, from morning to night. Wagon loads of them are poured into market, where they sell from fifty, to twenty-five and even twelve and a half cents per dozen; and pigeons become the order of the day, at dinner, breakfast, and supper, until the very name becomes sickening. When they have been kept alive, and fed sometime on corn and buckwheat, their flesh acquires great superiority: but in their common state they are dry and blackish, and far inferior to the full grown young ones, or squabs.

The nest of the Wild Pigeon is formed of a few dry slender twigs, carelessly put together, and with so little concavity, that the young ones, when half grown, can easily be seen from below. The eggs are pure white. Great numbers of Hawks, and sometimes the Bald Eagle himself, hover about those breeding places and seize the old or the young from the nest amidst the rising multitudes, and with the most daring effrontery. The young, when beginning to fly, confine themselves to the under part of the tall woods where there is no brush, and where nuts and acorns are abundant, searching among the leaves for mast, and appearing like a prodigious torrent rolling along through the woods, every one striving to be in front. Vast numbers of them are shot while in this situation. A person told me he once rode furiously into one of these rolling multitudes, and picked up thirteen pigeons which had been trampled to death by his horse's feet. In a few minutes they will beat all the nuts from a tree with their wings, while all is a scramble, above and below, for the same food. They have the same cooing notes common to domestic pigeons; but much less of their gesticulations. In some flocks you will find nothing but young ones, which are easily distinguishable by their motley dress. In others, they will be mostly females; and again, great multitudes of males, with few or no females. I cannot account for this in any other way than that during the time of incubation the males are exclusively engaged in procuring food, both for themselves and their mates; and the young being unable yet to undertake these extensive excursions, associate together accordingly. But even in winter I know of several species of birds which

separate in this manner, particularly the Red-winged Starling, among whom thousands of old males may be found with few or no young or females along with them.

Stragglers from these immense armies settle in almost every part of the country, particularly among the beech woods, and in the pine and hemloch woods of the eastern and northern parts of the continent. Pennant informs us that they breed near Moose fort at Hudson's bay, in N. lat. 51°, and I myself have seen the remains of a large breeding place as far south as the country of the Choctaws, in lat. 32°. In the former of these places they are said to remain until December; from which circumstance it is evident that they are not regular in their migrations like many other species, but rove about, as scarcity of food urges them. Every spring, however, as well as autumn, more or less of them are seen in the neighbourhood of Philadelphia; but it is only once in several years that they appear in such formidable bodies, as have been described; and this commonly when the snows are heavy to the north, the winter here more than usually mild, and acorns, &c. abundant.

The Passenger Pigeon is sixteen inches long, and twenty-four inches in extent; bill, black; nostril covered by a high rounding protuberance; eye, brilliant, fiery orange; orbit, or space surrounding it, purplish flesh coloured skin; head, upper part of the neck, and chin, a fine slate blue, lightest on the chin; throat, breast, and sides, as far as the thighs, a reddish hazel; lower part of the neck and sides of the same resplendent changeable gold, green and purple crimson, the last most predominant; the ground colour, slate; the plumage of this part is of a peculiar structure, ragged at the ends; belly and vent, white; lower part of the breast fading into a pale vinaceous red; thighs, the same; legs and feet, lake, seamed with white; back, rump, and tail coverts, dark slate spotted on the shoulders with a few scattered marks of black; the scapulars tinged with brown; greater coverts, light slate, primaries and secondaries, dull black, the former tipt and edged with brownish white; tail, long, and greatly cuneiform, all the feathers tapering towards the point, the two middle ones plain deep black, the other five, on each side, hoary white, lightest near the tips, deepening into bluish near the bases, where each is crossed on the inner vane with a broad spot of black, and nearer the root with another of ferruginous; primaries, edged with white; bastard wing, black.

The female is about half an inch shorter, and an inch less in extent; breast, cinerous brown; upper part of the neck in-

clining to ash; the spot of changeable gold green and carmine, much less, and not so brilliant; tail coverts, brownish slate; naked orbits slate coloured; in all other respects like the male in colour, but less vivid, and more tinged with brown; the eye not so brilliant an orange. In both, the tail has only twelve feathers.

THE BARBER OF GOTTINGEN.

[From Blackwood's Edinburgh Magazine.]

One night about ten o'clock, as the barber of Gottingen college was preparing to go to rest, after having scraped the chins of upwards of a dozen of students, the door of his shop opened briskly, and a short, burly, thick set man made his appearance. He seemed to be about fifty years of age. In stature he did not rise above five feet, but this was amply compensated by a paunch which would have done honour to a burgomaster. His face, his legs, and, in truth, his whole frame gave equal tokens of *enbonpoint;* and spoke in eloquent terms of good living and freedom from care. This worthy personage had on a broad brimmed glazed hat, a brown frock coat, and brown small clothes, with copper buckles at the knees. His hair, which was curly, and as black as pitch, descended behind and at each side, underneath the rim of his hat. His whiskers were thick and bushy; and his beard appeared to be of at least four days' growth.

The salutation which he made on entering the *sanctum sanctorum* of the barber, was more remarkable for freedom than for politeness. He pushed the door roughly aside, and strutted into the middle of the room, placing his hands jockey-wise into his coat pockets, and whistling aloud.

"Can you shave me, I say?" was his first address to the astonished tonsor.

"Sir?" said the latter, with a stare of surprise, as he turned round and encountered the eye of this new arriver.

"I say, can you shave me?" thundered out the latter with increased loudness.

The barber was a tall, meagre, spindle shanked figure of a man, somewhat up in years, and not remarkable for an extraordinary share of courage. He had, however, too high an opinion of himself—being no less than peruke maker to the professors of Gottingen—to stand tamely by, and be bearded in his own house. His indignation got the better of a feeling

of dread, which in spite of himself, began to creep over him; and he heard the demand of his visiter with rather an unusual share of resolution.

"You ask me if I can shave you, sir," said he, ceasing from the operation of strapping a razor, in which he was engaged, "I can shave any man that ever wore a beard; and I see no reason why you should be more difficult to shave than other people, unless, peradventure, your chin is stuck over with bristles like a hedge hog, or some such animal."

"Well, then, why don't you shave me?" returned the other, throwing himself upon a chair, pitching his hat carelessly to one side, and stretching out his short plump legs as far as they would go. "Come along, my old boy; now I am ready for you." So saying, he unloosed his neck cloth, laid it down, and grasped and rubbed his neck and chin with both hands with an appearance of peculiar satisfaction. But the college barber was in no mood of mind to relish such freedoms. He stuck his Dutch spectacles upon the tip of his long skinny nose, projected forward his peering chin in a sarcastic, sneering manner, and eyed the stranger with a look any thing but favourable. At last he broke silence—

"I said, sir, that I could shave any man but ——."

"But what?" said the other, aroused by the gravity of his tone, and turning around upon him.

"But it is not my pleasure to shave *you*."—And he commenced strapping his razor as before, without taking any farther notice of his neighbour. The latter seemed astounded at what he heard. He, in fact, doubted the evidence of his ears, and gazed upon the Barber with a look of curious astonishment. His curiosity, however, soon gave way to anger; and this was indicated by a most portentous heaving about the chest, and an increased flushing of his rubicund face. His cheeks were at length blown out and distended with genuine rage, till they acquired something of the rotundity and proportions of a good large pumpkin.

"Not shave *me!*" ejaculated he, emptying his lungs and cheeks at once of the volume of air accumulated within them. The rushing out of this hurricane of wrath was tremendous. —The barber trembled from top to toe when he heard it; but he uttered not a word.

"Not shave *me!*" He was silent as before.

"Not shave *me!*" repeated the little man a third time, louder than ever, and starting from his seat with a bound perfectly remarkable for his corpulency. The shaver got alarmed, and well he might; for the other stood fronting him

—his arms a kimbo—his eyes flashing fire; and all his attitudes indicative of some hostility. The strap was dropped, and the razor quietly deposited upon the mantelpiece.

"Do you mean to do me an injury in my own house?" said the barber, with all the courage he could muster.

"Donner and Blitzen! Who talks of injuring you? I wish you to scrape my beard. Is there any thing extraordinary in that?"

"I can shave no man after ten o'clock," replied the barber. "Besides, my business is solely confined to the professors and students of the university. I am strictly forbidden to operate on the face or head of any other person, by the most learned Dr. Dedimus Dunderhead and the Senatus Academicus.

"Doctor Dedimus Dunderhead!" observed the other with a contemptuous sneer. "And who the devil may he be?"

"He is the Provost of the University, and Professor of Moral Philosophy thereunto," answered the barber; not a little scandalized at hearing that learned man spoken of in such terms.

"Ay—and a pretty dunderheaded fellow he must be to give any such orders. However, I am not going to waste my time here all night. All that I have got to tell you is this, that if you wont shave me, I shall shave you." And, suiting the action to the word, he reached up his hand, got hold of the barber by the nose, and placed him, by sheer force, upon the chair which he himself had just left. The suddenness of this action deprived the other for a moment of his senses. He sat gazing, with a mixture of rage and amazement, at the author of the audacious deed; nor was it till he felt the brush, loaded with cold soap suds, thumping upon his cheeks, and heard the stranger laughing aloud, that he reflected upon his situation. His first impulse was to start up, but he was instantly pushed down by the brawny arm of the little man. He then turned his head from side to side to avoid the assaults, but this did not mend the matter: his face was reached by the brush, and brow, nose, cheeks, and ears besplattered with saponaceous effusion. Nor when he attempted to bawl out, were his efforts more successful: the indefatigable operator filled his mouth with lather, and laid on with greater energy than ever. With one hand grasping him by the throat, and the other armed with the shaving brush, the fat man continued at his occupation, laughing heartily, and enjoying, with the most turbulent mirth, the scene before him. At last the barber managed with great difficulty to get out some words,

and cried strenuously for mercy, promising, by heaven and earth, to shave his oppressor when and where he thought proper, whatever Doctor Dedimus Dunderhead and the Senatus Academicus might say to the contrary.

This declaration procured him a release. He rose up trembling from the grasp of the stranger, and having his face more thoroughly bedizened with his own peculiar liquid, than any face, handsome or ugly, which ever came under his hands. His first care was to free it of those ignominious marks of good will by means of a towel, while the author of this outrage threw himself upon the chair, almost convulsed with laughter.

As the astonished shaver prepared his utensils for the operation about to be performed, though in a different manner, upon his opponent, he had some leisure to recover from the shock into which he was thrown. Indignation was still a prominent feeling in his mind; but this was subordinate to other emotions; and the dread of his sufferings being repeated, together with the appearance of the stranger, who had now resumed his seat, and was whistling impatiently, made him hasten his preparations with unusual speed. Having arranged every thing, that is to say, having prepared a razor, mixed up a quantity of foaming lather, and stuck a towel under the chin of his customer, he was about to commence, when the latter thundered out, "*avaunt!*" The barber gave way like a scared poacher, retreated some steps, and gazed at the other with ill suppressed alarm.

"Perhaps you mean to cut my throat!" said the stranger, in a loud voice.

"My business is to shave beards, and not to cut throats," rejoined the affrighted shaver, with all humility.

"Very like!—very like; but I don't choose to take you at your word: so have a care. If you cut my throat, I will blow your brains out, that's all." And placing his hand in one of the large pockets of his frock-coat, he brought out a horseman's pistol, cocked it deliberately, and placed it on a chair which stood beside him. "Now proceed," continued he, "and remember, if you so much as scratch a pimple on my chin, or leave a single hair unshorn, I shall send a bullet through your numscull."

The appearance of this terrible weapon augmented, as may well be supposed, the barber's alarm. His hand shook like an aspen leaf, and he kept laying on the suds ten times longer than he ever did on any former occasion. He was terrified to lay his razor on the chin of so dangerous a subject, and re-

solved to keep brushing to the very last moment, rather than run the risk of having a pistol discharged at his head. The delay indeed, was useful to him, as it gave his hand time to recover its wonted steadiness. Nor did the stranger take it ill, on the contrary, his good humour appeared to return with the agreeable titillation of the shaving brush; and he whistled aloud, thereby blowing the soap from his lips upon the barber's face with a look of apparent satisfaction.

Half an hour had now passed away since the latter commenced laying on the soap, and he was still employed in this preliminary operation. The fat man relished it mightily; and, far from complaining of its tediousness, kept whistling away and humming snatches of old songs, to the no small annoyance of the operator, who found the utmost difficulty in making the brush move smoothly over features so diversified in motion and expression. Notwithstanding all this gayety, however, the shaver did not like his new acquaintance. There was something odd about him; and, even though there had been nothing remarkable, he could not, at once forget the egregious insult offered to his own person only a short time before. Instead, therefore, of laughing at his strange sallies of broad humour, he felt his heart burning with a wrath which nothing but genuine fear prevented from bursting forth. The whistling and singing of the stranger only produced disgust; his witticisms drew forth nothing but a grin. Every moment his outrageous mirth became more intolerable. His whole aim seemed to be to stultify and ridicule the unfortunate barber, who continued to apply the brush with a feeling of agony which dyed his pale cheeks to a dingy hue, and lengthened his gaunt physiognomy fully a couple of inches.

It will be asked, why did he not get through with his operation, and rid himself of so troublesome a customer? This, as we have said, proceeded from his dread of applying the razor to the chin of so irritable a personage. But time quiets all things, and his dread at last wore off. His hand became steadier, and he thought he might now venture to finish a business, commenced under such extraordinary auspices. His attempt was in vain. No sooner had he ceased applying the soap, and was in the act of moving off for his razor, when the loud voice of his customer fell, like thunder, upon his ear.—"Brush away, my old boy—nothing like it." And he continued humming these words for a quarter of an hour longer, during which time the barber was compelled to soap his chin without the least interval of repose. It was now eleven, as was indicated by the striking of the college clock.

Three quarters of an hour had he scrubbed away at the chin of this strange character, and as yet he saw no more chance of his labour terminating than when he began. The same toilsome, never ending task was still before him, and he was kept working at it as by some supernatural agency. It was in vain for him to get into a passion; the fat man laughed in his face. It was in vain to attempt a cessation of his labour;—the eternal "Brush away," from the mouth of his tormentor, kept him at the work. Still more vain was it for him to refuse; he remembered the punishment inflicted upon himself for such an act, and had, moreover, an eye to the pistol hard by, with which, doubtless its owner would have enforced compliance.

Never was any human being so completely wretched. He felt as if in the charmed ring of some enchanter, from whose precincts it was impossible to escape. He had no power of his own. His will was useless; every movement of his body was in direct opposition to its dictates. What could he do? If he stopped one moment, that cursed sound of "Brush away," was thundered into his ears. If he moved for his razor, he was brought back by the same invoking spell. If he refused to shave, he ran the risk of being shaved himself. Nay, even though he had the razor in his hand, what security had he that he might not scratch the chin of such a talkative and unsteady being, and thereby get as a reward a pistol bullet through his brain?—Such was the deplorable condition of the barber of Gottingen University.

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"Exhausted, say you, my old boy? I shall cure you of that. Here, swallow a little of this glorious stuff—the Elixir Diaboli of Doctor Faustus." So saying, he drew a bottle of red liquid from his pocket, uncorked it in an instant, and before the barber was aware, forced one half of it down his throat. "Now brush away," continued he, "nothing like it."

Confounded by the suddenness of this action, the operator had no time to reflect. Again did he begin his eternal labour —again was the brush loaded with a supply of suds, and laid on as before. Inspired by what he had swallowed, he felt new vigour diffuse itself throughout his body. His arms, for-

getting their fatigue, worked with refreshed energy, while the fat man continued to bawl out "brush away," and laughed, and grinned alternately in his face.

But although his body was strengthened, let it not be supposed that the least glimmer of satisfaction was communicated to his mind. On the contrary, he became every moment more overwhelmed with amazement and wretchedness. Body and mind seemed to have dissolved their natural connexion. The former was a mere puppet over which the latter had no control. The unhappy man felt his misery. He knew the utter absurdity of his conduct—he knew that he was acting the part of an idiot—madman—a laughing stock. Yet with all this knowledge he could not check himself in his nonsensical career; but, as if by some infernal influence, he continued to lather the face of his obstreperous customer, notwithstanding all that inclination and common sense could say to the contrary.

We have said that the College clock struck eleven. Another half hour passed by, and midnight was approaching. The apartment in which this strange scene was carried on began to get obscure, from the untrimmed lamp, and fading glow of the fire. A dim twilight from these sources lit it up, aided by the rays of the young moon peering through a small window, which opened into the college court. Every moment the place was becoming darker; and at last, the barber's blocks, capped in their corresponding wigs, and ranged at intervals along the wall, were so obscure, that they might have been mistaken for the heads of so many human beings stuck upon poles: nothing but their dark outlines were discernible. On the expiring embers of the fire stood the kettle, still singing audibly, and pouring forth streams of vapour from its spout.

This scene of gloom was no impediment to the operations of the barber. He still continued his incessant toil, and the strange man as unceasingly his vociferations. "Brush away, my old boy," came perpetually from his lips, and was succeeded invariably by a long drawn despairing sigh from the bosom of the shaver. The darkness at length became so great, that the latter could with difficulty, perceive his own brush and soap-box. The lamp flickered some score of times like a dying meteor, and then went out; while nothing remained of the fire but a few red embers which communicated a local glow of warmth, but scarcely emitted the slightest ray of light. The room was illuminated solely by the faint beams of the moon, and was so dark that nothing but the out-

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There was not a soul present but himself and his fearful companion. His house opened into the College churchyard, which was a dismal place, surrounded by high walls, and regularly locked in each evening. Every circumstance, therefore, contributed to render his situation more appalling. There was no one at hand to relieve him in his distress: no one to hear him should he invoke their aid. There was even no way of escape should he be so fortunate as to get out: the lofty wall of the cemetery rendered that a hopeless undertaking.

Meanwhile, he continued to ply at his endless task: The least pause brought on increased exclamations from the stranger. While he lathered him with rapidity, he was comparatively silent: but on any occasional pause from fatigue, the cries became redoubled in loudness and rapidity. Times without

solved to keep brushing to the very last moment, rather than run the risk of having a pistol discharged at his head. The delay indeed, was useful to him, as it gave his hand time to recover its wonted steadiness. Nor did the stranger take it ill, on the contrary, his good humour appeared to return with the agreeable titillation of the shaving brush; and he whistled aloud, thereby blowing the soap from his lips upon the barber's face with a look of apparent satisfaction.

Half an hour had now passed away since the latter commenced laying on the soap, and he was still employed in this preliminary operation. The fat man relished it mightily; and, far from complaining of its tediousness, kept whistling away and humming snatches of old songs, to the no small annoyance of the operator, who found the utmost difficulty in making the brush move smoothly over features so diversified in motion and expression. Notwithstanding all this gayety, however, the shaver did not like his new acquaintance. There was something odd about him; and, even though there had been nothing remarkable, he could not, at once forget the egregious insult offered to his own person only a short time before. Instead, therefore, of laughing at his strange sallies of broad humour, he felt his heart burning with a wrath which nothing but genuine fear prevented from bursting forth. The whistling and singing of the stranger only produced disgust; his witticisms drew forth nothing but a grin. Every moment his outrageous mirth became more intolerable. His whole aim seemed to be to stultify and ridicule the unfortunate barber, who continued to apply the brush with a feeling of agony which dyed his pale cheeks to a dingy hue, and lengthened his gaunt physiognomy fully a couple of inches.

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number was he obliged to shift the brush from one hand to the other from actual exhaustion. It was in vain: there seemed to be no termination to his efforts. If he relaxed a moment he was sure to be recalled by the incessant 'Brush away' of the mysterious man.

Such intolerable misery could not endure. Human nature, in the person of the barber, was taxed to its utmost efforts, and refused to do more. The anguish he sustained gave him courage, and, stepping aside all at once, he made to the door, intending to effect his escape. Alas! scarcely had he advanced a yard towards the threshold, than a 'Brush away,' louder than any he had yet heard, fell upon him like a thunderbolt, and froze the very spirit within him. He returned to his task, and commenced brushing the beard of the fat man as before. The cries of this personage now became more loud than they had been for the last half hour. His slumbers seemed to be broken, and he resumed with unabated vigour, his old system of singing and whistling, and laughing fearfully.

'Brush away,' continued he with his intolerable laugh. 'An't fatigued, I hope, my old boy? Will you have another taste of my elixir, eh?"

"We are more in need of lights than of elixirs," ejaculated the barber, with an effort which it cost him all his skill to accomplish.

"Brush away, then, and we shall not want lights. There's a brace of them for you. Did you ever see any thing finer, old boy?"

The barber started back a fathom with amazement; and well he might, for in the midst of the darkness he beheld two horrid luminous eyes glaring upon him. They were those of the fat man, and seemed lighted up with that hideous spectral glow which is to be seen floating in cemeteries and other places of corruption. The unnatural glare made his whole head visible.—His face, so far as the soap permitted its tint to be seen, was flushed to the colour of deep crimson. His dark hair appeared to be converted into sable snakes; and when he laughed, the whole inside of his mouth and throat resembled red-hot iron, and looked like the entrance to a furnace within his entrails. Nor was the breath which emanated from this source endurable: it was hot, suffocating, and sulphureous, as if concocted in the bottom of hell. Such a hideous spectacle was more than the barber could endure. It gave speed to his feet; and, dashing down his brush and soap-box, he rushed out at the door, in an agony of desperation.

Away he ran through the churchyard, into which, as we

have said, his door opened. Nothing was capable of impeding his progress. He leaped over the hillocks, tombstones, ditches, and every thing that stood in his way. Never was terror so thoroughly implanted in the heart of a human being. He had not been half a minute out, however, when his ears were saluted with one of the stranger's horrible laughs, and with his still more horrible "Brush away." In another moment he heard footsteps coming after him, which made him accelerate his speed. It was to no purpose; the steps behind gained upon him, and, on looking back he beheld, to his horror, the fat man—his face covered with soapsuds—the towel tucked under his chin, his hat off, and the horseman's pistol in his hand. He laughed, and roared out 'Brush away,' as he pursued the wretched shaver, with a speed miraculous for a man of his unwieldy size. The moon, which shone brightly at this time, rendered every object tolerably distinct.

Pushed to desperation, the barber turned his footsteps to the tower of the steeple, the door of which stood wide open. He entered, and attempted to close it behind him. It was too late; the other was close at his heels, and forced himself in. There was no time to be lost. Our fugitive mounted the stair of the tower, and ascended with the rapidity of lightning. There was a door nine stories up, which opened on an outside terrace upon the top. Could he only gain this, all would be well, as he could lock the door outwardly, and exclude his pursuer from coming farther. His exertions to achieve this were tremendous, but without much success, for, about a yard behind him, he heard the steps and unnatural laugh, and "Brush away," of the stranger. He even saw the light of his phosphorescent eye, glaring upon the dark stair of the tower, as he came behind him. Every effort was in vain. The barber mounted the topmost step and pushed through the door; the fat man did the same.

They were now on the terrace—above them rose the church spire to a hundred and thirty feet—below them yawned a gulf of as many more! The first salutation of the stranger to his companion was a hideous laugh, followed by "Brush away! nothing like shaving!" The barber, meanwhile, stood as far removed from him as he could; the monument of pale despair. His teeth chattered, his knees knocked together, and he knelt down with the agony of terror.

"Ha, ha!" exclaimed his tormentor; "what dost thou think now, old boy? Brush away; come, give me a scrubbing till six in the morning—only five hours more—nothing like a lit-

tle wholesome exercise." He concluded with one of his intolerable laughs.

"Brush away," continued he, holding his sides and laughing at the mortal fear of the barber. "Out with thy lather-box and thy brush, man; where are they, old beard-scraper?"

"I have thrown them away," muttered the terrified shaver.

"Thrown them away! Dunder and Blixum, then I have a good mind to throw thee away also! A toss from the tower would be a mighty pretty thing to look at in such a fine moonlight morning."

So saying he took hold of the barber by the nose, as he knelt for mercy, lifted him up with perfect ease, and held him at arm's length over the terrace. The poor man's alarm at being poised by the beak over such a tremendous gulf may be better conceived than described. He kicked, and threw out his long arms to and fro, like a spider on the rack. He roared aloud for mercy as well as his pinched nose would admit of—promised to shave his honour to the last moment of his life—mentioned the destitute condition in which his wife and family would be left by his death, and made use of every tender argument to soften the heart. It was in vain—the fat man was not to be moved; for, in the midst of one of the most eloquent appeals, he opened his thumb and fore finger by which the barber was held. The nose slipped down from between them, and its owner, body and soul, tumbled headlong through the abyss of a space, a descent of one hundred and thirty feet. Down, down, down he went, whirling round about like a shuttlecock, sometimes his feet being upwards, sometimes his head. During these multiplied circumgyrations, he had occasional glimpses of his adversary above him. There he beheld him leaning over the terrace, with his soapy face and the towel before him, holding his sides and laughing with inconceivable vigour—while every now and then he could hear the hated "Brush away," coming from his lips. But the most dreadful of all the scenes which greeted him was the glare of his ghastly eyes, which shot down spectral glances, and seemed like sepulchral lights to illuminate him on his descent. Dreadful were the feelings of the barber as he approached the ground. His frame shuddered convulsively—his breath came fast he felt almost suffocated, and drew himself into the smallest possible dimensions, like a snail within his shell.

The fatal moment came at last when he was to be dashed in pieces, but, contrary to the laws of gravitation, the nearer he approached the earth the more slow his descent became.

At last it was so gentle, that he seemed to be sustained in air. Some good angel had caught him in his fall, and, instead of being shivered to atoms, he was borne, as on the wings of light and music to the ground. On turning round he felt some gentle one reposing beside him. It was his wife.—Worthy couple! they were snug in bed together; and the barber found, to his inexpressible satisfaction, that he had been dreaming!

For the Port Folio.

ON THE WRITINGS AND CONVERSATION OF DR. JOHNSON.

Few authors, in modern times, have been more liberally honoured with the applause of the public than Dr. Johnson. He has gained full credit for all the learning, and all the merit which he ever possessed. The authority of his name has given a sanction and a currency to his opinions, which cannot be obtained by a less fortunate or a less popular writer. Hence many of his readers and admirers receive his opinions, and admit his assertions, without due examination; nay, even with implicit confidence in their truth. But we shall find that he has advanced opinions, in his writings, which are not infallible; and has even sometimes defended them by sophistical arguments. Nor are these fallacious opinions always innocent. Indeed error is seldom harmless in its consequences, however trifling and insignificant it may at first appear. History informs us that the most important events have often arisen from very small causes. We know that, in conversation, Johnson often defended a bad cause, either to display his ingenuity in debate, or to hear what arguments his opponent was able to adduce on the side of truth.

"We know that Cicero and Johnson," says D'Israeli, "considered their eloquence as a deceptive art. It was indifferent to them which side of a subject they adopted. In reading their elaborate works, our ear is more frequently gratified by the magnificence of their diction than our heart penetrated by the pathetic enthusiasm of their sentiments.—The sophistry of Johnson, in conversation, seems to have been his favourite amusement. But Cicero is more censurable, since in the most solemn acts of life, and before the tribunal of justice, he confesses to have protected and saved the life of many a criminal by the power of his eloquence."

D'Israeli's Miscellanies.

"Johnson seems to have been addicted to the silly egotism

of exulting in his intellectual strength, and contended, in most of his extemporary conflicts, more for victory than truth." *Life of W. Melmoth.*

Johnson was not a man of general knowledge, and therefore we may reasonably suppose that he would sometimes err either through ignorance or prejudice. But we should hardly suspect that a man so famous for morality and love of truth, would attempt to establish a false position by means of delusive argument. It will be difficult, however, to exculpate him from the charge of artifice and deception in some instances. Haley, and other writers, have exposed several false sentiments in Johnson's writings; and many more might be detected by an acute observer, whose curiosity should lead him to examine them with close attention. I will examine the following passage in Johnson's Life of Milton, because it has deceived some readers, and has been quoted as authority by scholars, who deem literature more useful and advantageous to mankind than philosophy.

"But the truth is," says Johnson, "that the knowledge of external nature, and the sciences which their knowledge requires or includes, are not the great or the frequent business of the human mind. Whether we provide for action or conversation, whether we wish to be useful or pleasing, the first requisite is the religious and moral knowledge of right or wrong; the next is an acquaintance with the history of mankind, and with those examples, which may be said to embody truth, and prove by events the reasonableness of opinions.—Prudence and justice are virtues and excellencies of all times and of all places; we are perpetually moralists, but we are geometricians only by chance. Our intercourse with intellectual nature is necessary; our speculations upon matter are voluntary and at leisure. Physiological learning is of such rare emergence, that one man may know another half his life without being able to estimate his skill in hydrostaticks or astronomy; but his moral and prudential character immediately appears." *Johnson's Life of Milton.*

It will be difficult to find a passage of equal length so obscure, so erroneous, or so incorrectly expressed. It is clear that the writer did not understand the whole of his subject. I suspect some typographical error in the first sentence, for it is so obscure, that I am doubtful whether I understand the author's meaning as it stands in the above quotation. I suppose Johnson intended to convey the sentiment which may be intelligibly expressed as follows. "The knowledge of external nature, and the sciences by which external nature may be explained, are

not the great or the frequent business of the human mind." If this be his meaning, nothing but common observation is required to demonstrate his mistake. The knowledge of external nature constitutes the great and daily business of most part of mankind. The principal arts of life, those by which we procure food, clothing, and shelter, depend upon our knowledge of external nature. Agriculture, manufactures, and commerce are the foundation of civilized society. But these depend upon our knowledge of external nature. "All," says one of the greatest and best men of the age, "all that tends to the security and comfort of mankind is derived from the arts, and these depend upon the knowledge of the powers of nature, with which we are conversant." By the assistance of chemistry, mathematics, and physics we obtain our knowledge of natural objects, and apply this knowledge to the practical use of life.

I recommend to the reader the charming address to Philosophy, at the conclusion of "Summer," in Thomson's Seasons, which affords a complete refutation of Johnson's silly sophism. Thomson was a philosopher as well as a poet.

"Without thee what were unenlightened man?
A savage, roaming through the woods and wilds
In quest of prey; and with the unfashioned fur,
Rough clad; devoid of every finer art
And elegance of life. Nor happiness
Domestic, mixed of tenderness and care,
Nor moral excellence, nor social bliss,
Nor guardian law were his; nor various skill
To turn the furrow, or to guide the tool
Mechanic."

F. N.

(*To be continued.*)

AMERICAN CANALS.

THE following table, which has been prepared from official documents, for the New York Observer, contains a brief view of the routes, dimensions, and cost, of all the important canals, whether completed, in progress, or contemplated, in the United States, and the adjacent British North American provinces. They show that there are now actually completed within the limits of the United States, exclusive of improved river navigation, 690 miles of canal, with 2645 feet of lockage, constructed at an expense of 14,500,000 dollars; and there are now in progress, and to a considerable extent, under contract, 828 miles of canal, with 3,611 feet of lockage, to be completed in a few years, at an estimated expense of 10,250,000 dollars; making in all, completed and in progress, 1518 miles of canal, with 6256 feet of lockage, at an expense of 24,750,000 dollars. If to these we should add the canals seriously contemplated, and which will probably be completed in ten years, the whole length of canal line would be extended to at least 3000 miles. In England there are more than one hundred canals, extending 2680 miles, constructed at an expense of 132,000,000 dollars, and yielding an average income of ten per cent on the capital invested. England has been more than fifty years completing this extensive line of inland navigation. The people of the United States, will probably have completed a line equally extensive in less than 20 years from the time they commenced.

STATES.	Name, or Points connected.	ROUTE.	Length.	Width.	Depth.	Am't of Lockage.	Cost.
			Miles.	Feet.	Feet.	Feet.	Dollars.
Nova Scotia.	Halifax harb. & bay of Fundy.	From Halifax to Shubenacadie river, -		60	8		145,000
L. Canada.	Lachine.	From Montreal to Lachine, - -	7				
U. Canada.	Welland.	From the mouth of Grand river in lake Erie, to the mouth of Twelve Mile creek in lake Ontario, -	43			334	338,000
Maine.	Oxford & Cumberland.						
N. Hampshire	Winnipiscogee lake & Piscataqua river.	From tide-water at Dover to mouth of Merry-meeting river.	28	30	4	501	590,982
	Merrimack river & Connecticut river.	1st. By Sunapee lake and Sugar river, -				1600	2,000,000
		2d. By Baker's river and Oliverian river. -				500	
Vermont.	L. Champlain & Connecticut river.	1st, or northern route, from Burlington to Montpelier and thence to the Connecticut, at the mouth of Wells river,	78			2139	
		2d, or middle route, from Burlington to Montpelier and by Stephens' branch to the Connecticut at the mouth of White river, - - - -				1243	
		3d, or southern route, from Burlington to Montpelier and by Dog river to the Connecticut at the mouth of White river,				1451	
	Conn. R. & lake Memphremagog.	1st, or eastern route, by Clyde and Nulhegan rivers,				791	
		2d, or middle route, by Barton and Passumpsic rivers,				1278	
		3d, or western route, by Black R. and Joe's brook,				2245	
	Otter creek & lake Champlain.	From Rutland through Castleton to Whitehall.	25			75	
	Middlesex.	From Boston harbour through the county of Middlesex to Merrimac river at Chelmsford, - -	27	30	4	136	470,000

STATES.	Name, or Points	ROUTE.	Length.	Width.	Depth.	Am't of Leckage.	Cost.
			Miles.	Feet.	Feet.	Feet.	Dollars.
Massachusetts	Cape Cod.	1st. From mouth of Back river in Buzzard's bay to mouth of Scusset river in Barnstable bay,	7	60	8	80	
		2d. From Barnstable harbour to Hyannus harbour,	4½	60	8	160	
	Boston harbour & Narraganset bay.	From Weymouth to Taunton,	26	60	8	260	1,250,000
	Boston harbour & Hudson river.	From Boston through Ashburnham and the valleys of Miller's, Deerfield, and Hoosack rivers, to the Hudson near Troy,	178	43	5	3281	6,023,172
	Hampshire & Hampden.	From Northampton through Westfield to Southwick,	28	41	6	298	206,000
N. Hamp. & Massachusetts	Merrimac river canals.	Around the different falls from Concord to the entrance of the Middlesex canal,	6			131	
N. Hamp., Vt. Mass., & Con.	Connecticut river canals.	Around the different falls between Hartford, Connecticut, and Barnet in Vermont,	17			420	1,439,827
Mass. & R. Island.	Blackstone.	From Worcester down the valley of the Blackstone to Providence,					
Connecticut.	Farmington.	From Southwick, Mass., through Farmington to New Haven,	58	36	4	218	350,000
New York.	L. Erie & Hudson river.	From Albany to Buffalo,	360	40	4	660	8,248,000
	L. Champlain & Hudson river.	From Whitehall to Troy,	64	40	4	197	875,000
	Hudson & Delaware.	From near Kingston, N. Y., through the valleys of the Rondout, Neversink, Delaware, and Lackawaxen,	124	36	4	1332	1,600,000
	Oswego R. & Erie canal.	Through the valleys of Oswego and Seneca rivers and Onondaga lake,	40			160	

STATES.	Name, or Points connected.	ROUTE.	Length.	Width.	Depth.	Am't of Lockage.	Cost.
			Miles.	Feet.	Feet.	Feet.	Dollars.
New York.	St. Lawrence R. & L. Champlain.	From near Ogdensburgh through St. Lawrence, Franklin, and Clinton counties, - -	130			1650	
	Seneca L. & the Erie canal.	From Geneva by Waterloo to Montezuma.					90,000
	Niagara canal.	Around the falls of Niagara. - -	8	60	8	317	
	Erie canal & St. Lawrence R.	1. From Herkimer by the valley of Black R. to Ogdensburgh, - - - -				1831	
		2. From Rome by Boonville to Ogdensburgh,	114			1587	931,014
		3. From Rome by Camden to Ogdensburgh,	129			635	855,630
	Chenango R. & Erie canal.	From Chenango point by the valley of Chenango to Whitesborough, - - -	96			1032	715,478
	Port Watson.	From Syracuse up the valley of Onondaga creek.	47			865	432,000
	Chatauque.	From Portland on lake Erie to the head of Chataque lake,	10¼			724	398,685
	Genesee.	From Rochester by the valleys of the Genesee, Black creek, and Oil creek to Olean, - -	111			1059	875,588
	Buffalo & Allegany river.	From Buffalo through the valley of the Conewango to Alleghany river, - - -	89			856	503,312
	Cayuga lake & Susquehanna R.	Through Ithaca, along Mud creek and the valley of the Owego, - - - -	31			760	320,000
	L. Island canals.	From Southampton to Gravesend bay, -	85½				212,218
	Chemung.	From Seneca lake to Susquehanna river, -	18			520	239,118
New Jersey.	Morris.	From the Delaware opposite Easton to the tide waters of the Passaic river, - - -	80	32	4	1627	1,000,000
	Delaware & Raritan.	From Lamberton through the valleys of the Assanpink and Millstone to the Raritan, - -	84	60	8	213	

STATES.	Name, or Points connected.	ROUTE.	Length.	Width.	Depth.	Am't of Lockage.	Cost.
			Miles.	Feet.	Feet.	Feet.	Dollars.
Pennsylvania.	Lehigh river.	From Easton to the mouth of Mauch-chunk creek,	45			347	
	Schuylkill river.	From Philadelphia to the coal mines in Schuylkill county,	111			588	1,500,000
	Union canal.	From Reading by the valleys of the Tulpehocken and Swatara to the Susquehanna, - -	78	36	4	466	1,200,000
	Pennsylvania.	From the termination of Union canal to Pittsburg,					
	Lancaster.	From Lancaster to Susquehanna river, -	18			63	53,240
Maryland.	Baltimore & Potomac river.						
	Baltimore & Susquehanna R.	- - - - -	36				841,243
Pennsylvania & Maryland.	Susquehanna R. canals.	Around the falls in the river, - -					
Delaware & Maryland.	Delaware & Chesapeake.	From the Delaware 6 miles S. of New Castle, to Back creek 5 miles S. of Frenchtown, - -	13½	60	10	16	1,200,000
Virginia.	Potomac R. canals.	Around falls in the river, - -	7			163	444,000
	James R. canals.	Around falls in the river, - -	30	25	3	114	not ascer.
	James R. & Ohio road and canal.	From Richmond to Point Pleasant, -	433			1346	1,945,416
	Dismal Swamp, or Chesapeake & Albemarle.	From Elizabeth R. to Pasquotank R. -	22¼	38	5½	32	450,000
N. Carolina.	Roanoke river. Cape Fear river. Yadkin river.	Around falls, - - - -					
S. Carolina.	Santee.	From Santee river in a south-east direction, through Charleston district, to Cooper river, -	22	35	4	108	650,667

STATES.	Name, or Points connected.	ROUTE.	Length.	Width.	Depth.	Am't of Lockage	Cost.
			Miles.	Feet.	Feet.	Feet.	Dollars.
S. Carolina.	Ashley & Edisto.	- - - - -	12				
	Bays on the coast.	- - - - -	15				
Georgia.	Savannah, Ogeechee, & Altamaha rivers.						
Florida.	Atlantic & Gulf of Mexico.	1. By the Suwaney and St. Mary's, -	18				
		2. By the Suwaney and St. John's, -	12				
Louisiana & Florida.	Mississippi R. & Appalachicola.	Through lakes and bays near the coast,	12			00	
Alabama.	Tennessee & Mobile.	By the Hiwassee, Okoa, Conasauga, and Coosa rivers,	9			51	126,420
Louisiana.	Carondelet.	From lake Pontchartrain to Orleans, -	1½	30	4	00	
Kentucky.	Louisville & Portland.	Around the falls of the Ohio, - -	2	68	16	22	370,000
Ohio.	Ohio & Erie.	From the mouth of the Scioto to Cleaveland,	306	40	4	1185	3,081,979
	Ohio & Mad. river.	From Dayton by Middletown and Hamilton, to Cincinnati, - - - -	67	40	4	308	623,520
Maryland & Ohio.	Chesapeake & Erie.	Up the Potomac valley and by Pittsburg to lake Erie,	500				
Indiana.	Maumee & Wabash.	- - - - -	20			30	300,000
Illinois.	Michigan & Illinois.	From the Chicago to the lower rapids of Illinois,	90	40	4	70	1,000,000
Ohio & Michigan.	Michigan & Erie.	By the valleys of St. Joseph's and Maumee river,					

Nova Scotia.

Nova Scotia canal—At a meeting held in Halifax, on the 18th of Feb, 1826, resolutions were adopted for making a sloop canal from Halifax harbour to Shubenacadie river, which discharges itself into the Basin of Minas, the eastern arm of the bay of Fundy. A subscription for shares was opened and £12,000 subscribed.

Canada.

Lachine canal.—This canal was completed last fall. It connects Montreal with the village of Lachine, (which is situated on Montreal Island, 7 miles above the city) and opens an easy passage for boats around the rapids, bars and shoals, which obstruct the navigation of the St. Lawrence between these two places.

Welland canal.—The route of the Welland canal commences on the shore of lake Ontario, at the mouth of Twelve Mile creek, and proceeds in a northernly direction up the valley of that stream for 21 and a half miles, ascending in this distance 334 feet by 35 locks. It then enters the river Welland on its surface, 8 miles from its junction with the Niagara, and proceeds up this stream which is deep and sluggish, for 9 and a half miles, at the end of which distance it leaves the river, and continues in a S. W. direction to the mouth of Grand river, where a harbour is to be constructed. Lake Erie will be the feeder of the canal through its whole extent, and will also furnish water for mills, &c. to any extent. The width and depth of the canal, are to be sufficient for sloop navigation.

Maine.

Oxford and Cumberland canal.—We have not been able to ascertain the route of this canal, or the points which are to be connected by it. We learn, however, from the Boston papers, that an efficient Board of Directors was elected by the Stockholders in January; that the ground has been minutely surveyed; that the whole expense is estimated at only 145,000 dollars, and that the work will, without doubt, soon be completed.

New Hampshire.

Winnipiseogee and Piscataqua canal.—A company was incorporated in 1811, to cut a canal from the mouth of Merrymeeting river, at the southern extremity of Winnipiseogee lake to the Cocheco branch of the Piscataqua river below

the landing in Dover, and the charter has recently been renewed. In the summer of 1825, Mr. James F. Baldwin was employed to survey the route. Mr. B. ascertained that the waters of the lake are 501 feet above the level of the Piscataqua; the fall will require 60 locks, each of which he proposes should be of stone, 82 feet long and 12 and a half wide in the clear. Mr. B. proposes that the canal should be fed through its whole length from the lake itself. This will require that the waters of the lake should be raised two feet, by a dam at the present outlet, and a deep cut averaging 17 feet for 7 miles. The expense of the canal is estimated at $590,982, and a subscription has been opened within a few months for stock to this amount. When this canal is completed, it is the opinion of the best informed persons, that it will be continued in a N. W. direction from the lake to Connecticut river, and thence north to lake Memphremagog; thus securing to Portsmouth and Boston a valuable trade, which would otherwise pass down the Connecticut to New-York. Mr. Baldwin estimates the expense of continuing the canal from Winnipiseogee lake, through Squam lake to the Pemigewasset or Merrimac at Holderness, four miles below Plymouth Court house, at $74,000.

Merrimack and Connecticut canal.—The route of a canal from the Merrimack to the Connecticut through Sunapee lake, was surveyed in 1816 and found to be impracticable, at a less expense than $2,000,000. The descent from the lake, each way to the rivers, was found to be more than 800 feet, making the amount of lockage at least 1600 feet, which is more than that of any canal in Europe.

The route by the valley of Baker's river [which discharges itself into the Pemigewasset or Merrimack at Plymouth,] and that of the Oliverian river which falls into the Connecticut at Haverhill, has never been accurately surveyed. It is the opinion, however, of Mr. M'Duffee, a well known and excellent surveyor, who not long since went over the ground with several other respectable gentlemen, to examine it with a view to a future admeasurement, that the summit level is not much over 300 feet above the Pemigewasset at Plymouth. The descent from the summit level to the Connecticut, it is presumed, is much less than this, as Mr. M. says that a cut can be made from the Connecticut above Haverhill to Baker's river, to feed the canal, in case the Orford and Piermont ponds should be insufficient for the purpose.

VERMONT.

Champlain and Connecticut canal.—At a meeting of Delegates from the counties of Chittenden, Washington, Orange, and Caledonia, convened at Montpelier in June last, commissioners were appointed to ascertain the practicability of a canal from lake Champlain to the Connecticut, through the valley of Onion river. From the report of the Commissioners, made a few weeks since, it appears not only that a canal is practicable on any one of several routes, examined by them, but that the expense will be far less than would at first be supposed. The commissioners propose that the canal should commence on the shore of Lake Champlain, at the village of Burlington, and proceed up the valley of Onion river to Montpelier. At the very commencement of the work in Burlington village, there will be a rise of 220 feet, which must be overcome by locks, after which the canal will proceed through Williston and Richmond to Bolton falls, a distance of *twenty-one miles on a perfect level!* From Bolton Falls to Montpelier, 16 miles, the level of the canal will uniformly ascend, and the whole rise in this distance is 174 feet.

From Montpelier to Connecticut river three routes have been examined; 1st, The *northern* route through Plainfield and Marshfield to Onion river pond in Peacham, and thence through Groton, and down the valley of Wells river to the Connecticut, which it meets in Newbury. From Montpelier to Onion river pond, 21 miles, the level of the canal will uniformly ascend, and the whole ascent in this distance is 877 feet. From Onion river pond to the Connecticut, 19 miles, the level unformly descends and the whole descent in this distance is 918 feet; 2dly. the *middle* route, through Barré and Williamstown, to the summit height at Cutter's pond, and thence in a southerly direction to the Connecticut at the mouth of White river, From Montpelier to Cutter's pond the ascent is 363 feet, and from Cutter's pond to the Connecticut, the descent is 486 feet. 3dly. The *southern* or rather the *western* route proceeds up the valley of Dog river, through Berlin, and Northfield, to the summit height in Roxbury and thence to the Connecticut at the mouth of White river. From Montpelier to the summit height, 16 miles, the ascent is 484 feet, and from the summit height to the mouth of White river the descent is 590 feet.

On all these routes there is an ample supply of water on the summit level, particularly on the third and first. On the third or Dog river route, there appear to be no serious difficulties to encounter, and this route passes through a

fine section of country, which is traversed in its whole extent by the main road from Burlington to Boston. The commissioners did not attempt to form any estimate of the expense; their survey being merely for the purpose of ascertaining the practicability of a canal. Having determined this, the legislature have since taken measures to form an accurat e and complete survey.

Memphremagog and Connecticut canal.—The surveys on the different routes proposed for this canal were made last summer, by De Witt Clinton, Jun. (son of Gov. Clinton) under the authority of Congress. The *first route*, which presents fewer obstructions than either of the others, is from lake Memphremagog up the valley of Clyde river, nearly to the source of that stream, and thence, down the valley of Nulhegan river to the Connecticut. The principal feeder on this route is Knowlton lake, in the town of Random, which is very easily accessible. The summit level is 495 feet above lake Memphremagog, and 296 above the mouth of Nulhegan river. The *second route* commences on lake Memphremagog, and passes up the valley of Barton river to the height of land which divides its waters from those of the Passumpsic, and thence down the valley of the Passumpsic to the Connecticut. The feeder on this route is Willoughby lake, in the town of Westmore. The summit level is 523 feet above lake Memphremagog, and 755 above the Connecticut at the mouth of the Passumpsic. It will require a deep cut to connect Willoughby lake with the line of the canal, but the supply of water will be ample. The *third route* proceeds from lake Memphremagog up the valley of Black river, and thence across to Joe's brook, which rises in Walden, and passing through Danville, falls into the Passumpsic in Barnet, within a few miles of the Connecticut. The summit level on this route is 1011 feet above lake Memphremagog, and 1243 above the Connecticut at the mouth of the Passumpsic; and it is, therefore, certain that it will not be adopted. We have seen no estimate of the expense of a canal on either of these routes.

The Memphremagog and Connecticut canal is only a part of a long line of canals, designed to connect Boston harbour with the river St. Lawrence. The links in this grand chain of inland communication, are 1. Middlesex canal in Massachusetts; 2. The canals around the falls in Merrimack river; 3. The Merrimack and Connecticut canal, by the route of Baker's and Oliverian rivers; 4. The Connecticut and Memphremagog canal; and fifthly, a few short canals and

locks necessary to overcome the rapids between lake Memphremagog and the river St. Lawerence.

Otter creek and Champlain canal.—This canal will be partly in Vermont and partly in New York. A company was incorporated at the late session of the Vermont legislature, to cut it as far as the line of that State, and measures have been taken to obtain the consent of New York to continue it to Whitehall, at the entrance of the Champlain canal. When completed, this work will open a boat navigation by canal and creek of about 75 miles into one of the finest portions of Vermont. No important impediments stand in the way of its execution. The excavation will be easy, and the passage of Sutherland falls, which present an elevation of about 75 feet, is the only part of the route which will require locks. The summit level will be at the junction of the canal and Otter creek, and the supply of water will be abundant.

Massachusetts.

Middlesex canal.—This canal is wholly supplied with water from Concord river, which crosses it on the summit level, 22 miles from Boston harbour, and 5 miles from the junction of the canal with the Merrimack. From Boston harbour to the summit level, is an ascent of 104 feet, and thence to the Merrimack is a descent of 32 feet. There are in all 20 locks of different lifts, of which the highest is 12 feet. These locks are 75 feet long, and 11 feet wide. Boats for the transportation of produce carry 14 tons, and are drawn by one horse, 3 miles an hour. Packet-boats pass the whole length in 5 hours going down, and 7 hours going up. From the summit level down the canal there is a current, which exceeds in no place half a mile per hour, there being a fall or descent in the canal of one inch per mile.

The canal was commenced in 1790 by an incorporated company, and was opened for use in 1804. The principal articles brought down the canal are timber, and lumber of all kinds, pot and pearl ashes, rye, oats, and provisions, and building stone. The income of the company in 1808 was $7000; in 1811, $17,000, and in 1816, $32,000.

Cape Cod canal.—Two routes have been proposed for a sloop canal across the isthmus as stated in our table. To the first route there appear to be insurmountable obstacles; the channel leading to the entrance of the canal through Buzzard's bay being obstructed by shoals; while on the Barnstable side there is no harbour or shelter whatever, and the tide, which rises to the height of 18 feet, breaks on an open beach. On

the second route there would be a harbour at each end of the canal, but the great obstacle here is the height of the intermediate ground, estimated at 80 feet above tide water. Other obstacles are also presented in the shoals which obstruct the entrance of Barnstable harbour, and the difficulty of the navigation from Boston to Barnstable.—The importance of a canal across this isthmus may be judged of from the fact that *six thousand* passages are now made round Cape Cod annually, by our foreign and coasting vessels, most of which would pass through a canal if it were constructed.

Boston and Narragansett canal.—In the year 1807 the route of this canal, commencing at Weymouth landing, in Boston harbour, and proceeding in a southernly direction to Taunton, at the head of sloop navigation on Taunton river, 20 miles from its entrance into Narragansett bay, was examined by order of the Massachusetts legislature. The highest intermediate ground was ascertained to be 133 feet above tide water, but may be reduced ten feet by digging to that depth the length of a mile. Two ponds, known by the names of Weymouth and Cranberry, the largest and least elevated of which covers 500 acres, and is 14 feet higher than the summit of the proposed canal, will supply the upper locks with water by feeders, four miles long.

Boston harbour and Hudson river canal.—The commissioners appointed by the Massachusetts legislature to survey a route of a canal from Boston harbour to Hudson river, made a report to that body at their recent session, accompanied by a copper plate plan of the proposed route, made by L. Baldwin, Esq. the Engineer. According to the engraved plan, the canal is to commence on Boston neck and to pass through Brookline, Brighton, Water-town, Waltham, Weston, Lincoln, Sudbury, Acton, Littleton, Groton, Shirley, Lunenburgh, Leominister, Fitchburgh, Ashburnham, Winchendon, and the valley of Miller's river to the Connecticut. Thus far the route has been thoroughly and accurately surveyed and the expense to this point is estimated at 3,000,000 of dollars, more than one half of which is for lockage, the whole ascent and descent to be overcome being 1959 feet! A canal on this route, however, is practicable, as it is fully ascertained that an abundance of water can be brought to the summit level.— From the Connecticut it is proposed that the canal should be continued through the vallies of Deerfield and Hoosack rivers to the Hudson. The length of this part of the canal is 78 miles, the lockage 1322 feet, and the expense is estimated at $3,023,172, of which $920,832 is for a tunnel, four miles in length, through Hoosack mountain.

Several other routes from Boston to the Connecticut were examined by the commissioners; and to one, which so far deviates from that above described as to pass through Bolton, Berlin, West Boylston, Sterling, and Westminster, they give the preference above all others. A route, called the southern route, which commencing on the Connecticut at or near Springfield, passes through Worcester, and unites with the northern route at Farmingham, was examined by the commissioners, but they did not think favourably of it. They say that if Boston would secure the Connecticut river trade the canal should intersect the Connecticut as high up as Miller's river, because there are many obstructions between the mouth of that river and Springfield, and boats which have once passed these, and arrived at Springfield, will continue on to Hartford, (the channel being clear and the distance short,) rather than proceed to Boston. At the same time, for the accommodation of the inhabitants of Hampden, Hampshire, and Worcester counties, the commissioners suggest the expediency of a branch canal, to commence near Springfield, and to pass up the valley of Ware's river to Oakham, and thence through Rutland and Holden to the northern route. A side cut could be made from this branch to the town of Worcester, through the valley of Holden brook, at no very great expense, the distance being only eight miles.

Hampshire and Hampden canal.—This canal is to commence on Connecticut river at Northampton, and to pass through Easthampton, Southampton, Westfield, and Southwick, to the Connecticut line, where it will unite with the Farmington canal, which proceeds on to New Haven. The route has been recently surveyed by Mr. Hurd, who estimates the expense of the work, exclusive of feeders, at $206,000. He proposes that the locks should be of wood with stone backing.

New England.

Connecticut river canals.—Many years since canals and locks were constructed at considerable expense around the falls in this river, at South Hadley in Massachusetts, at Bellows falls opposite Walpole, in New Hampshire, and at various other places; but many obstructions to the navigation still remaining, a company was formed last spring for the purpose of purchasing the existing improvements, and adopting a regular system for the removal of all remaining impediments. During the last summer accurate surveys were made under the direction of this company, from Hartford,

(Conn.) at the head of sloop navigation, to the foot of M'Indoes' falls, at Barnet, in Vermont, a distance of 219 miles. The descent of the river in this distance is 420 feet, which the directors propose to overcome by dams and locks, and by short canals, extending in all 17 miles, and leaving 202 miles of slack-water navigation. The cost of the whole is estimated at $1,071,827, to which, if we add $368,000, the price demanded for the existing locks and canals, it will make the total expense of the improvements on the river, if completed according to the estimates, $1,439,827.

The following is a list of the improvements with the estimated expense:—1. Improvements at Enfield falls, ten miles above Hartford, $119,885. 2. Various improvements, alterations, &c. at South Hadley, $194,027. 3. At and near Hadley, $15,143. 4. A dam, &c. thirteen miles below Montague falls $36,005. 5. Improvements at Montague falls, $89,000. 6. At and near Miller's falls, $25,217. 7. A dam, &c. at Cooper's rocks, near the line of New Hampshire, 46,445 dolls. 8 A dam and canal opposite Brattleborough, 57,420 dollars. 9. A dam at Clay's island, 12 miles below Bellows falls, 27,504 dolls. 10. Improvements at Bellows falls, 107,313 dollars. 11. A dam and canal in the north part of Charlestown, 46,610 dolls. 12. A dam at Dean's flat, two miles below Windsor bridge, 36,570 dollars. 13. Improvements at Queechy falls, between Hartland and Plainfield, 59,369 dolls. 14 Improvements at White river falls, in Lebanon, N. H. 85,709 dolls. 15. A dam and canal opposite Bradford, 29,725 dolls. 16. Improvements near Newbury, 66,486 dolls. 17. A canal in Barnet, 19,286.

Above Barnet the obstructions to the navigation are very formidable. The whole descent from lake Connecticut, in which the river has its source, to Barnet, is 1170 feet; viz.

From the level of the lake to Eames' dam at Stewartstown	562
From Eames' dam to summer's dam, in Dalton, at the head of the Fifteen Miles Falls	222
The Fifteen Miles Falls (which make by the line of level 20 miles)	336
From the foot of these falls to the foot of M' Indoes' falls, between Barnet and Lyman	50
	1170

N. Hampshire and Massachusetts.

Merrimac river canals.—Merrimac river has been made

navigable for boats from tide water to the upper landing at Concord. The principal improvements are the following:—1. *Bow Canal*, around Garven's falls, 3 miles below Concord. It is one-third of a mile long, cost $21,000, and descends 25 feet by three locks. 2. *Hooksett canal*, 6 miles lower down, overcomes a descent of 17 feet by two locks, and cost $17,000. 3. *Amoskeag canal*, 8 miles below Hooksett one mile long, overcomes a descent of 45 feet by six locks, and cost $50,000. 4. On leaving Amoskeag canal you enter a section of the river, 9 miles in extent, converted by law into the *Union canal.* There are in this space six falls, which have been overcome by seven locks at an expense of $47,000. 5. Five miles below the termination of Union canal, are *Cromwell's* falls, which have been made passable by one lock at an expense of $9,000. 6 *Wicassee canal*, 15 miles below Cromwell's falls, and three miles above the entrance of the Middlesex canal, is half a mile long, cost $14,000, and has one lock, which overcomes a fall of about 10 feet. 7. A little below the entrance of the Middlesex canal is *Patucket canal*, which is 4 miles long, and, by three locks, descends 34 feet. Below Patucket canal, the river is navigable, though rapid, the current descending 45 feet before it meets the tide at Haverhill, a distance of 36 miles.

R. Island and Massachusetts.

Blackstone canal.—The route of this canal commences at tide water in Providence, and proceeds in a northerly direction to Woonsokett falls, in Blackstone river, near the Massachusetts line, and thence up the valley of the Blackstone to Worcester. Contracts have been made for excavating and embanking during the present year, nearly all that part of the line which is in Rhode Island, and it is expected that the whole work will be accomplished and opened for navigation at the close of the year 1826. We have not been able to find an accurate statement of the dimensions and estimated cost of this canal.

Connecticut.

Farmington canal.—This canal commences in Southwick ponds, on the Massachusetts line, at the point where the Hampshire and Hampden canal terminates, and proceeding through Granby on the level of the ponds for four miles, descends by six locks 38 feet, to the Farmington level; on this level, which continues 27 miles, it crosses Salmon brook by a culvert, passes through Simsbury, crosses Farmington

river by an aqueduct 280 feet long and 34 feet above the surface of the stream, and proceeds through the village of Farmington to Southington, where the level terminates. From Southington the route proceeds through Cheshire and Hamden to New-Haven, a distance of 27 miles, in the course of which it descends by 26 locks 180 feet, making the whole amount of lockage on the canal 218 feet, all of which is descending from the ponds.—The canal is chiefly supplied with water from Farmington river, by a feeder proceeding from the aqueduct to an elevated point in the stream three miles above. The feeder is of the same dimensions with the canal, and will form part of a branch canal, 15 miles long, which it is proposed to extend to New Hartford a distance of 15 miles, at an additional expense of $101,773. The excavation of the Farmington canal was commenced in September 1825, and the whole work will probably be finished in 1827. The expense was estimated by Judge Wright at $420,000, but the contracts for the principal part of the work, have been actually made at about 20 per centum less than this estimate.—Through this canal, and the Hampshire and Hampden canal, a convenient navigation will be opened from New Haven to Northampton, and to all the rich country on both sides of the Connecticut river above that town.

New York.

Erie and Hudson Canal.—This canal commences at Buffalo, on lake Erie, near the mouth of Buffalo creek, and proceeds for 10 miles along the shore of lake Erie, and the bank of Niagara river, to Tonnewanta creek, which it enters at its mouth. The channel of the Tonnewanta is then made use of for 12 miles, after which, the canal proceeds in a N. E. direction by a deep cut, 7 and a half miles to Lockport, where it descends 60 feet by five locks, and proceeds in an easterly direction on the south side of the ridge road, and parallel with it, on a uniform level for 63 miles, to Rochester, where it crosses the Genesee river by an aqueduct of nine arches, each of fifty feet span, and immediately after receives a navigable feeder or branch canal, two miles long, which connects it with the Genesee river above the great falls; it then proceeds in an easterly direction to Montezuma, 67 and a half miles, in which distance it descends 126 feet by locks at various places, and crosses Mud creek twice by aqueducts, near the villages of Palmyra and Lyons. At Montezuma the level of the canal begins to ascend, and between this place and the town of Salina, a distance of 27

miles, it rises 67 feet. In Salina commences the *Long level*, which is preserved through the towns of Manlius, Sullivan, Lenox, Verona, Rome, Whitestown, Utica, and into Frankfort, in Herkimer county, *a distance of more than sixty-nine miles.* From Frankfort the canal descends in the course of 12 miles 49 feet to the head of the Little Falls, where are five locks, each of eight feet descent, and an aqueduct over the Mohawk supported by three arches, connecting the Erie canal with the old canal at German flats. From the foot of the Little Falls the canal continues its course for 70 miles down the valley of the Mohawk, on the south side of the river, through Danube, Canajoharie village, Charleston, Florida, Rotterdam, and the city of Schenectady to Niskayuna, 4 miles below Schenectady, where it crosses the Mohawk by an aqueduct 748 feet in length, and supported by 16 piers, 25 feet above the river. The whole descent from the foot of the Little Falls to Nishayuna is 86 feet. After crossing the Mohawk, the canal proceeds along the north bank of the river for 12 miles, and then recrosses by an aqueduct 1188 feet in length, and passes by the Cahoos Falls, where, in the space of two miles, it descends 132 feet by 16 locks. A little below the Cahoos falls, a feeder comes in from the Mohawk and connects the Erie with the Champlain canal, and the united work then proceeds to Albany, 8 and a half miles, in which distance it descends 44 feet, and terminates in the tide waters of the Hudson.

Among the principal side cuts or short branches of the Erie canal, are 1. One in Watervliet, opposite Troy, where a passage is opened into the Hudson, by two locks. 2. One proceeding from Syracuse village in the town of Salina, one mile and a half to the village of Salina, at the head of Onondaga lake; and, 3. the one already alluded to, opposite Rochester, by which boats from the canal may ascend the Genesee river for more than 70 miles.—The locks of the Erie canal are 90 feet long in the clear, 15 feet wide, built of the most durable stone, and laid in the best water lime.

The Erie canal was commenced on the 4th of July 1817, and completed October 26th 1825.—The whole cost of the Erie and Champlain canals up to the 1st of December 1825, including the extinguishment of the right of the Inland Lock Navigation Company, incorporated March 1792, and exclusive of interest paid on loans, was $9,123,000 which amount was reduced 1,352,000 dolls. by the excess of the fund provided to meet the interest on yearly loans, leaving an actual debt at the above date, of 7,771,000 dolls. Mr. Spafford in

his Gazetteer states the cost of the Champlain canal alone at 875,000 dolls. If we deduct this from 9,123,000 dolls. it will leave for the cost of the *Erie* canal 8,248,000 dolls. as stated in our table.—The canal fund produced in the year 1825 about 820,000 dolls. (viz. tolls, 500,000 dolls.; vendue sales, 222,000 dolls.; and salt duty, 100,000 dolls.) The interest on the canal debt being only 419,000 dolls., there remained of course, a net surplus of 401,000 dolls. applicable to the reduction of the principal. The amount of tolls received on the canals in 1821, was 5,244 dolls.; in 1822, 64,072 dolls.; in 1823, 153,000 dolls.; in 1824, 289,820 dolls.; and in 1825, as stated above, 500,000 dolls. As the whole line of the canal is now complete, and an uninterrupted navigation open for the first time from the Atlantic to the Great lakes, it is confidently estimated that the income of the canal fund for the ensuing year will exceed $1,000,000

Champlain and Hudson canal.—This canal commences at the village of Whitehall, at the head of sloop navigation on lake Champlain, and immediately rising by three locks, 26 feet, proceeds on a level 5 and a half miles, up the valley of Wood creek, enters that stream and follows its channel for three miles, to a lock of 4 feet lift, which extends the navigation up the creek 3 and a half miles farther, to Fort Anne village, where after rising by three locks, 24 feet, it leaves the creek, and proceeds 12 miles on the summit level, through the towns of Fort Anne, and Kingsbury to Fort Edward. Here it receives the waters of the Hudson above the great dam in that river, by a feeder half a mile in length, and soon after descends 30 feet by three locks into the Hudson below the dam. The great dam is 900 feet long, 27 feet high, and throws back an ample supply of water for the summit level. From Fort Edward the navigation is continued at present down the channel of the Hudson 8 miles, to the head of Fort Miller falls, around which it is carried by a canal taken out of the east bank of the river, half a mile long and having 2 locks of 18 feet descent. From Fort Miller the river is made navigable for three miles further, by a dam at the head of Saratoga falls, just above which the canal is again taken out of the river on the West side, and proceeds on a level for 17 miles through Saratoga and Still water, Schuyler's flats, and over Fish creek by an aqueduct, to a point two miles below Still water village. From this point to Waterford, where the canal enters the Mohawk, (a distance of nine miles) it descends 86 feet by 9 locks, 6 of which are in the town of Waterford. From Waterford, the Hudson is now made na-

vigable for sloops to Troy, 3 and a half miles below, by a dam across the river at the latter place, 1100 feet long, 9 feet high, and having a sloop lock at its eastern extremity 114 feet long, 30 feet wide, and 9 feet lift. The whole cost of the dam and lock was $92,270.

The whole length of the Champlain canal from Whitehall to Troy, is 64 miles, 46 of which are strictly canal, and 18 improved navigation in Wood creek and Hudson river. This last, however, will soon be diminished, for a canal is now in progress from Fort Edward to the head of Saratoga falls, which will prevent the necessity of using the channel of the Hudson between these points.—The Champlain canal was commenced June 10, 1818, and was finished to Troy, Sept. 10, 1823.—To insure an abundant supply of water on the summit level of the canal, and to open the navigation to a still higher point on the Hudson, a navigable feeder has been commenced, leading from the river 2 miles above Glen's falls, through the village of that name and Sandy Hill, seven miles, to the Champlain canal, which it enters two miles above the village of Fort Edward.

Delaware and Hudson canal.—This canal, which connects the Hudson with the Delaware, and when completed will extend to the Lackawaxen coal mines in Pennsylvania, commences at Eddy's factory on the Rondout creek, two and a half miles from Kingston, and three miles from the Hudson, and proceeds up the valley of the Rondout, and that of the Sandberg, one of its branches, till it reaches the summit level at the source of the last mentioned stream, 35 miles from the Hudson, and 535 feet above its surface. From the summit level the canal proceeds in a southwesterly direction, down the valley of the Neversink to the Delaware, which it enters four miles above the mouth of the Neversink. The whole descent from the summit level to the Delaware is 81 feet. The distance from the Hudson to the Delaware on the canal line is 64 miles, and the whole of this section is under contract, to be completed by the first of October next; (less than 15 months from the time it was commenced) Nearly one-third is already finished. The locks on this section are 90 feet long and nine wide.

From the junction with the Delaware, we understand that the canal is to proceed up the valley of that river 20 miles, to the mouth of the Lackawaxen; thence up the valley of the Lackawaxen and that of the Dyberry, one of its branches, to Keen's Pond, which is five miles S. W. of Bethany, in Wayne co. Pa. about the same distance N. E. of the princi-

pal coal mines, and is elevated 718 feet above the level of the canal at its junction with the Delaware. This pond will be connected with the mines by a railway. When the whole work is completed, the directors of the canal company say that the Lackawaxen coal can be delivered in New York and sold for $4 a ton.

The Delaware is navigable for one hundred miles above the mouth of the Lackawaxen, and at the distance of fifty miles above the mouth of that stream, it approaches within 12 miles of the Susquehanna, at a point where the intervening country is favourable for a canal or railway, and the legislature of New York have recently incorporated a company for the execution of the work. Through this channel, the people of the southern counties of New York, contiguous to Pennsylvania, will send their produce to the New York market.

Oswego Canal.—We have already mentioned that the Erie canal is connected by a side cut with the village of Salina, at the head of Onondaga lake. At this village five locks are made, of 38 feet descent, connecting the cut with Onondaga lake. From Onondaga lake through Seneca and Oswego rivers, to the head of the falls in Oswego river, 12 miles from Lake Ontario, there is a descent of only 24 feet, and these waters can easily be made navigable for boats to that point. The descent from the head of the falls to the village of Oswego on lake Ontario is 98 feet, and Mr. Geddes, the Canal Engineer, who surveyed this route, recommends a canal, apart from the river, for the whole of this distance.—A canal has also been projected to connect Oswego river with the Mohawk through Oneida lake.

St. Lawrence and Champlain canal.—The route of this canal from Ogdensburgh, as far as Chateaugay river, has been examined by Benj. Raymond, civil engineer. The summit level, which is 1245 feet above lake Champlain, can be abundantly supplied with water from the Chateaugay lake.

Seneca canal.—Two routes have been proposed for connecting Seneca lake with the Erie Canal; one passing in a N. W. direction through Vienna and Phelps, and the other, from Geneva, along the outlets of Seneca and Cayuga lakes to the Erie canal near Montezuma. The canal commissioners have decided on the latter, the expense on this route being only $90,000, while on the other it would be $215,000.

Niagara canal.—More than a year since, the legislature of New York incorporated a company to cut a canal around the falls of Niagara river, and open a navigable communi-

cation from lake Erie to lake Ontario. The distance in which the navigation is interrupted is only eight miles, and terminates at Lewistown, where sloops from the lower lake arrive. Instead of building locks down the mountain ridge, (300 feet high) the company proposed a railway to be travelled by water power, and it was estimated that about $150,000 would effect the object. A few months since a meeting was held at Lewistown and a committee was appointed to petition the legislature to extend the capital of the company, and authorize the making of a *sloop* instead of a boat navigation round the falls. Such a canal is practicable, and will prevent the necessity of resorting to the Welland canal on the Canada side.

Erie and St. Lawrence canal.—Three routes have been recently surveyed from the Erie canal to the St. Lawrence at Ogdensburgh, as stated in our table. The first route is considered by the canal commissioners as less eligible than either of the others, and they therefore make no estimate of the expense in their report. The principal source of tonnage on this canal will be iron ore, which is found in abundance and of an excellent quality on the Black, Indian, and Oswegatchie rivers.

Chenango canal.—The route of this canal, which commences at the village of Chenango point, or Binghamton, at the junction of Chenango river with the Susquehanna, and proceeds by the town of Norwich, and along the valley of the Chenango, &c. to the Erie canal at Whitesborough, has been recently surveyed, and the estimates of the expense, &c. are as stated in our table. The source of the tonnage on this canal will be principally the agricultural produce of Broome, Chenango, and Madison counties, and perhaps of some parts of the Susquehanna valley below the mouth of the Chenango.

Port Watson canal.—This canal will proceed from the village of Syracuse, in the town of Salina, on the Erie canal, up the valley of Onondaga creek, and through the valley of Tully lakes to Port Watson on Homer river, a branch of the Chenango.

Chatauque canal.—The contemplated route of this canal is from the head of Chatauque lake to Portland on lake Erie. Portland is sixty miles from Buffalo, has a harbour of considerable importance, and is becoming a principal landing place.

Genessee canal.—Four distinct routes have been surveyed of a canal from the Erie canal at Rochester to Olean on the Allegany. The estimates for the first of these routes are

given on our table. The second route, viz. Scottsville and Le Roy, and the valley of Allen's creek, was abandoned, after a survey, as impracticable. The third route, by the valley of the Caneseraga, is estimated to cost 600,000. Of the fourth route, viz. by the valley of the Cushequa, which is said to be the shortest by several miles, no particular estimate is made.

Buffalo and Allegany canal.—Mr. Whippo, the engineer who recently examined the route of this proposed canal, says that it may be easily extended from the mouth of the Conewango, down the valley of the Allegany to Pittsburgh, and that the whole expense of a canal navigation from Buffalo to Pittsburgh on this route will be less than 2,000,000 dollars.

Cayuga and Susquehanna canal.—The route of this canal has been recently surveyed. It commences on the Cayuga lake, near the mouth of the Cascadilla, and proceeds through Ithaca, along Mud creek and the valley of Owego to the Susquehanna river. We know of no other particulars respecting it, except those given in our table.

Long Island canals.—The canals which have been proposed to connect the navigation along the southern shore of Long Island from Southampton to Gravesend bay, are 1. From Southampton, to join Southold bay with Southampton bay at Canoe place, half a mile long;—expense estimated at 30,913 dolls. 2. From the west end of Southampton bay at Quogg, to the east end of the Great South bay, at Kitcherbanneck, 3 1-2 miles; expense, 43,344 dolls. 3. Through shoals in the Great South Bay, 20,000 dolls. 4. From Hog island inlet, south end of the bay, to Jamaica bay, 4 1-2 miles. 63,837 dolls. and thence to Gravesend bay, 3 miles. Making the distance from Canoe place to Gravesend bay 85 1-2 miles; of which nine miles will be canal, and 76 1-2 bay navigation.

Chemung canal.—The route of this canal proceeds from the head waters of the Seneca lake, down the valley of the Chemung or Tioga river to the Susquehanna. The feeder will be 13 1-2 miles long, and the lockage 520 feet. The expense with wooden locks is estimated at 239,118; with stone looks, 407,598.

New Jersey.

Delaware and Raritan canal.—The main trunk commences in the valley of the Raritan, and follows it nearly to the junction of the Millstone and Raritan—thence passing along the course of the Millstone in the vicinity of Kingston, to

near the junction of the Stony Brook with the Millstone—thence through the valley of Stony Brook to the south of Princeton, through the Lawrence meadows in nearly a direct course, to the city of Trenton, and thence to the village of Lamberton, where it enters the Delaware. The canal is intended for sloop navigation, and the dimensions correspond with those of the Chesapeake and Delaware canal.

The Feeder commences at the confluence of the Delaware and Musconetcunk, near the mouth of the Lehigh, and passing along the valley of the Delaware, enters the canal in the city of Trenton,—the fall in the whole length of the feeder is 117 feet. The feeder is to be 40 feet wide, and 5 deep. The *summit level* on this route between the Delaware and Raritan, is 48 feet. Length of canal and feeder 34 miles. Agreeably to the provisions of the act of the Legislature of Pennsylvania, the approbation of the United States' Engineers has been obtained for the above route.

Morris canal.—The route of this canal leaves the Delaware opposite Easton, or rather opposite the mouth of Lehigh river, and runs along the north side of the valley of the Pohatcung for 12 miles, and then crosses that stream, and passes for more than 20 miles up the valley of the Musconetcung to within two-thirds of a mile of the great Hopatkung pond, in which that river has its source. Here is the summit level of the canal, and from this point the route, in its progress east, descends along the south side of the valley of Rockaway river, to the vicinity of the town of Rockaway, about 12 miles. From Rockaway to the tide waters of the Passaic, the route is not yet determined. The surface of the Hopatkung pond, on the summit level, covers about two square miles. This pond, which is connected with the canal by a short feeder, is to supply both the eastern and western sections with water through their whole extent. The whole of the western, and part of the eastern, section of the canal are under contract, and Mr. Bayard, the President of the Company, in an address delivered last October, says, that he has no doubt the whole work will be completed, and boats pass from the Delaware river to New York, in less than three years from that time.—The chief object of the Morris canal is to open a communication from the city of New York to the great beds of coal on the Lehigh river, the iron works of Morris county and the manufactories of Paterson.

Pennsylvania.

Lehigh river navigation.—This river which opens a pas-

sage from the Delaware to the Lehigh coal mines, has been made navigable by dams and falling locks for boats drawing less than 18 inches water, from Easton to the mouth of Mauch-chunk creek, a distance by the bends of the stream of 45 miles, in which space the fall of the river is 347 feet. From the mouth of Mauch-chunk creek, there is a fine road winding by an easy ascent, first two miles up the vale of Mauch-chunk creek, and then gradually up the mountain side, 7 more miles to the coal mines, which are situated upon the very summit of the ridge, 1006 feet above the surface of the Lehigh, at the mouth of the Mauch-chunk.

Schuylkill river navigation.—The Schuylkill navigation company commenced their operations in the year 1816, and in 1824 they had made an improved navigation from Mount Carbon, at the coal mines in Schuylkill county to the city of Philadelphia, a distance of 110 miles, 64 of which are canals; overcoming a fall of 588 feet, by means of 28 dams and 120 locks, at an expense of 1,500,000 dollars, only 50,000 of which were subscribed by the state.

Union canal.—This canal commences on the Schuylkill, two miles below Reading, and proceeds up the valley of the Tulpehocken, 40 miles, rising in this distance 378 feet by 53 locks, to the summit level near Lebanon, where it proceeds for five miles without a lock, and then descends the valley of the Swatara, 33 miles, to the Susquehanna near Middletown a few miles below Harrisburgh. The descent from the summit level to the Swatara, is 188 feet by 37 locks. The water for the section east of the summit level, is derived from the Tulpohocken, and that for the western section, if the feeders and reservoirs should be deficient, will be raised from the Swatara, by machinery. A tunnel to be bored for 286 yards through the ridge which divides the Swatara from the Quittapahilla, will be completed in August next, and the whole canal is to be finished by the end of 1827. Some hopes are entertained from the vigour with which the work is prosecuted, that boats will pass from the Schuylkill to the Susquehanna, in the fall of the present year.

Pennsylvania Canal.—At the recent session of the Pennsylvania legislature, an act was passed by the House of Representatives, 61 to 32, providing for the commencement of a canal by this name, which, it is expected, will ultimately connect the Union canal with Pittsburg, and thus open a navigable communication from the western waters to the tide waters of the Atlantic, through the heart of Pennsylvania. As a first step towards the execution of this magnifi-

cent plan, it has been determined to commence immediately two sections; viz. the eastern section, extending from the western termination of the Union canal to the Juniata 23 miles; and the western section, extending from Pittsburg up the valley of the Allegany to the mouth of the Kiskiminitas, 30 miles. The lockage on the eastern section will be 28 feet, and on the western section 44 feet. The estimated cost of the two sections is only 300,000, and they will both be valuable as independent canals, if the whole plan is never executed.

Lancaster Canal.—It is stated in the Lancaster Journal, that the Conestoga Navigation Company have entered into a contract with Mr. Caleb Hamil, to open a steamboat navigation from the city of Lancaster to the Susquehanna river, a distance of 18 miles, for 53,040 dollars; the work to be completed by the 4th of July, 1827. There are to be nine dams, and nine locks, averaging about seven feet lift each.

Maryland.

Maryland Canals.—The House of Delegates of Maryland have lately passed by a majority of one vote, a bill appropriating 500,000 dollars for a canal from Baltimore to the Potomac, 500,000 dollars for a canal from Baltimore to the Susquehanna, and 500,000 towards the proposed Chesapeake and Ohio canal.

Pennsylvania and Maryland.

Susquehanna river navigation.—The difficulties in the navigation of the Susquehanna are found principally in the last fifty miles of its course, between Columbia and tide water. Above that town the obstructions have been so far removed, that a boat navigation exists nearly to the New York line; but below Columbia the river is almost one continued rapid, and although it has been made passable for arks and rafts descending the stream, it is still impossible for boats to ascend with ease and safety. To remedy this evil so far as was in their power, the people of Maryland, several years since, constructed the Susquehanna canal, which extends from tide water eight miles up the valley of the river to the Maryland and Pennsylvania line, and it is now proposed to continue the improvements to Columbia. During the last year, engineers employed for the purpose, ascertained that it is practicable to make a safe and easy ascending navigation to this point at a moderate expense, either by a canal on

the west side of the river, of about 14 miles in length, or by short canals and locks at the different rapids.

Two years since, Commissioners appointed by the Legislature of Maryland to survey a route for a projected canal from the head of Conewago falls, in the Susquehanna, to Baltimore, reported that the whole length of the route is 93 and three quarters miles. The first section, extending from the falls to the Pennsylvania line is 41 miles, and the cost estimated at $1,000,265. The second section extending from the Pensylvania line to Havre de Grace is 14 miles, and the estimated cost is $ 564,471. The third section, from Havre de Grace to Baltimore is 36 miles, and the estimated expense 841,243 dollars, making the whole cost of the canal from Conewago falls to Baltimore, 2,626,000 dollars. The vote of the Maryland Assembly, granting 500,000 dollars for a canal from Baltimore to the Susquehanna, alluded to in the preceding article, appears to be the first step towards the execution of this magnificent improvement.

Delaware and Maryland.

Delaware and Chesapeake canal.—The route of this canal, as finally determined by the Board of Directors, is as follows: Commencing on the Delaware, near Newbold's landing, about six miles below Newcastle, it runs thence in a direction south of west 13 and a half miles, to the navigable waters of the Chesapeake, in Back creek, 4 or 5 miles south of Frenchtown. The summit level, which is only eight feet above the level of common high water in the Delaware and Chesapeake, will be supplied with water for the present from several small creeks and mill ponds, and if at a future day a greater quantity should be wanted it may be obtained either by tide power operating upon a water wheel, or by deepening the canal ten feet in about half the route, which will reduce its level to that of common high tides. Mr Randel, engineer, at whose suggestion the Directors adopted this route, states that by expending 2,000,000 dollars, it may be so improved as to admit the navigation of frigates drawing twenty feet of water. At the eastern termination of the canal, a semicircular harbour, containing about twenty acres, is to be made in the Delaware river. The company are very zealously engaged in the prosecution of this work, and there is no doubt that it will be finished in a short time. About 2000 men were employed upon the line last summer.

Virginia.

Potomac river canals.—The following are the obstructions in the navigation of the Potomac:—1. At the head of the tide, three miles above the city of Washington, are the *Little Falls*, around which is a canal 2 1-2 miles long, with three locks, overcoming an ascent of 37 feet. 2. Eight miles and a half further up, are the *Great falls*, around which is a canal one mile long, 6 feet deep, and 25 feet wide, with five locks, overcoming an ascent of 76 feet. 3. *Seneca falls*, 6 miles above, which descend 10 feet, are overcome by a canal without locks, three quarters of a mile long. 4. *Shenandoah falls*, 60 miles further up, where the Potomac breaks through the Blue Ridge. Here is a canal one mile long around a fall of 15 feet. 5. *Houre's falls*, five miles above the Shenandoah falls. Around these a canal has been cut, fifty yards long. Above Houre's falls the navigation has been improved by deepening the channel occasionally, and by the construction of dams, &c.; and by an extension of these improvements it is thought that the river can be made passable for boats the greater part of the year, as high up as Cumberland, 188 miles above tide water. The whole descent of the Potomac, from the mouth of Savage river to Cumberland, a distance of 31 miles, is 445 feet; from Cumberland to the Shenandoah falls, 131 miles, it is 490 feet; at and near the Shenandoah falls, 43 feet in 5 1-2 miles; from the Shenandoah to Great falls, 39 feet in 40 miles; and between the Great falls and tide water, 143 feet in 12 miles; making the whole descent, from the mouth of Savage river to tide water, 1160 feet in a distance of 210 miles. The Potomac is, therefore, the most rapid of the great Atlantic rivers.

The river Shenandoah, a branch of the Potomac, which joins it at Harper's ferry, after a course of 250 miles through the Great Limestone valley, has been made navigable to Port Republic, more than 200 miles from its mouth. The only obstructions in this distance were the falls in the last eight miles of its course, which have been overcome by six different canals, 20 feet wide, four feet and a half deep, extending together 2400 yards, and having five stone locks, effecting in all a descent of nearly fifty feet. The whole sum expended in the improvement of the Potomac river navigation, including that of the Shenandoah, according to Mr. Gallatin's report made in 1808, was $444,652.

James river canals.—This river is navigable for vessels of 125 tuns to Rockets, one mile below Richmond, where are he principal obstructions to the navigation. In the city of

Richmond there are twelve locks, overcoming an ascent of 80 feet, and connecting tide water with the basin on Shockoe hill. From this basin, a canal, 25 feet wide, and three feet deep, proceeds along the bank of the river for 2 1-2 miles, and then enters the stream, the bed of which is made use of for three miles further, and at the end of this distance there are three locks, overcoming an ascent of 34 feet. From the upper lock a canal 200 yards long leads to Westham, at the upper end of the Great falls. Above the Great falls there are few obstructions, and the James River Company many years since removed all obstacles to the passage of boats drawing 12 inches of water for 230 miles. From a message of the governor of Virginia to the Legislature in December last, we perceive that an independent canal has just been completed along the banks of the river, from the head of the Great falls to Maiden adventure falls, a place which we cannot find upon the map, but which we presume is twenty or thirty miles above Richmond; and the governor urges upon the Legislature the importance of taking measures immediately for extending this canal to Lynchburg, 144 miles above Richmond, or at least to Columbia, at the mouth of the Rivanna.

James river and Ohio road and canal.—In the year 1820, the board of public works of Virginia recommended to the general assembly, the following as the best practicable method of opening a communication between the waters of James river and those of the Ohio:—1. An independent canal from the basin at Richmond, up the valley of James river, and Jackson's river, one of its branches, to the mouth of Dunlap's creek, a distance of 249 miles: 2. A good road from the mouth of Dunlap's creek, across the Alleghany mountains, to the Kenhawa river, just below the great falls, a distance of 90 miles; and 3. From the foot of these falls to Mount Pleasant on the Ohio; at the mouth of the Kenhawa, a distance of 94 miles, they propose that the bed of the river should be made navigable by locks, dams, &c. The whole distance from Richmond to Mount Pleasant on this route, is 433 miles. The expense of the independent canal is estimated at $1,799,766; that of the road at $100,000; and that of the improvements in the navigation of the Kenhawa at $45,650; in all, $1,945 416.—The mouth of Dunlap's creek was ascertained to be 1238 feet above the tide at Richmond, and the lowest point on the dividing ridge between Dunlap's creek and the Great falls of the Kenhawa, is 2478 feet above the tide, and 1889 above the Kenhawa at the foot of the Great falls. From the foot

of the Great falls to the mouth of the Kenhawa, the river descends 108 feet.

From the message of the governor of Virginia, referred to in the preceding article, it will be perceived that a small part of the independent canal at the eastern extremity of the route is already finished, and it is probable that measures will be taken for a gradual extension of the work till the whole is completed to the Ohio. The principal articles to be transported on this line of communication are salt, of which more than 500,000 bushels are annually made on the waters of the Kenhawa, and coal, which is found in great abundance both on the Kenhawa and in the vicinity of Richmond.

Dismal Swamp canal.—This canal extends 22 and a quarter miles in length from Deep creek, a branch of the South branch of Elizabeth river, 7 miles above Norfolk, to Joyce's creek, which discharges itself into the Pasquotank, thirty miles from its mouth in Albemarle Sound. Vessels drawing 8 feet of water may ascend both creeks to each extremity of the canal. The intervening ground, along the eastern margin of the Dismal Swamp is almost level, the rise towards the middle not exceeding two feet above the two extremities, which are only 16 feet above tide water. The canal receives an abundant supply of water through a feeder 3 and a half miles long, leading from lake Drummond, a natural reservoir in the centre of the swamp, 15 miles in circumference and about six feet higher than the level of the canal. The descent from the summit level to the tide at each extremity of the canal, is accomplished by a pair of locks of 16 feet lift. Each lock is 90 feet long, and 18 and a half broad.

This Dismal Swamp canal originated in the concurrent acts of the legislatures of Virginia and North Carolina, incorporating a company for constructing it, in the year 1787, and is now nearly completed, according to the original plan, with the dimensions mentioned in our table, and has been in the receipt of tolls for a considerable time; with the present dimensions, however, the canal will not admit the passage of large vessels, and as it is very desirable in a national point of view that there should be an uninterrupted inland sloop navigation extending along the Atlantic coast, as far as possible, the Congress of the United States at their present session authorised the Secretary of the Treasury to subscribe for six hunded shares of the canal stock, amounting to $150 000, to enable the company to increase the width and depth of the work, so that they may correspond, if necessary, with those of the Chesapeake and Delaware, and the Delaware

and Raritan canals; or at least be sufficient for the admission of the largest kind of craft which can be employed in the Sounds of North Carolina.—The tolls of the canal in its present state are about $10,000 annually, but when completed, on the plan proposed, it is supposed that they will amount to four times this sum.

North Carolina.

Roanoke River.—This river is navigable for vessels of 45 tons to Halifax, near the foot of the Great Falls, 75 miles by land from the mouth of the river. At the great Falls the river descends 100 feet in a distance of 12 miles; but a canal is now completed around these falls to Rock landing, which opens the navigation for batteaux as far as the junction of the Dan and the Staunton. The Dan has been made navigable to Danville, where a canal is now in progress around the falls, which will open the navigation many miles further, and the Staunton is navigable for some distance, for boats of five tons. The lands on the Roanoke are among the most fertile in the United States, and yield annually for exportation produce to the value of $2,500,000. At present this is carried down the river to Albemarle Sound, and thence in a circuitous course through the Dismal Swamp canal to Norfolk, but it has been proposed to shorten this distance by a canal leading from the river above the Great falls, near the Virginia line, to Murfreesboro' on the Meherrin; thence down the channel of the Meherrin to the Chowan, and down the Chowan to the mouth of Bennett's creek; up Bennett's creek to its fork, and thence by a short cut to the Dismal swamp canal, and through that canal to Norfolk. This route was examined in the year 1816 by commissioners appointed by the legislatures of Virginia and North Carolina, and they reported that it was practicable at an expense of $761,522.

Cape Fear River.—Vessels drawing 10 or 12 feet water can ascend this river to Wilmington, 35 miles from its mouth, and boats to Fayetteville, 90 miles. A company was incorporated many years ago to improve the navigation, and they have expended large sums in deepening the channel below Fayetteville, and in various improvements above that town.

Yadkin River.—This river was surveyed under the direction of the Yadkin Navigation Company, in 1818, from Wilkes' court house in the mountains, to Cheraw hill, about

6 miles below the South Carolina boundary line, a distance of 247 and a half miles. The expense of making it navigable for boats of ten tons through this distance was estimated at $250,234, exclusive of the Narrows in Montgomery county, where a turnpike road was recommended for seven miles. Below Cheraw hill the river is navigable for large boats to the ocean, although the course is very winding and circuitous the distance in a direct line from Cheraw hill to Georgetown being only 103 miles, while by the course of the stream it is 270. It is thought that at least one-third of this distance can be saved by short canals at the different bends.

South Carolina.

Santee Canal.—This canal, which was completed in the year 1802, commences on the Santee at the point where Sumpter, Williamsburg and Charleston districts unite, and proceeds in a S. E. direction to Cooper river. The ascent from the Santee to the summit level is 35 feet, and is effected by four locks, each 60 feet long and 10 feet wide; the descent from the summit level to Cooper river, is 68 feet, and is effected by nine locks. The canal derives its water from the springs arising from the marshy ground on the summit level, and when the quantity is deficient, which is not often, it is supplied from the Santee by a steam engine. By means of this canal the produce of a large section of the state and a part of North Carolina is carried directly to the city of Charleston, and the circuitous and inconvenient navigation down the Santee and along the sea shore is avoided. In the year 1807 the annual tolls on the canal had never exceeded 13,000 dollars.

Short canals have been completed around the falls in the Wateree above Camden, by which the navigation has been opened from the Santee into North Carolina, and with the aid of similar improvements in that state it will be extended nearly to the sources of the river. Canals are also completed around the falls at the mouth of Broad and Saluda rivers, and a communication is thus opened from the Santee to an extensive and fertile country, occupying nearly the whole northwestern section of the State.

Ashley and Edisto canal.—Several years ago it was proposed to connect Ashley and Edisto rivers by a canal 12 miles long. We do not know that the work has yet been commenced.

Canals along the Coast.—The Waccamaw river, which joins the Pedee at Georgetown, runs nearly parallel to the sea coast at the distance of 8 or 10 miles, and is navigable

for vessels of 150 tons to the distance of 80 miles. It is intended to unite this river by a canal with Little river, which discharges itself in North Carolina within the sea islands. From Georgetown harbour, a canal, 5 miles long, has been cut across the tongue of land which separates it from the Santee.

Georgia.

Savannah, Ogeechee, and Alatamaha canals.—A Savannah paper of Feb. 11th states, that Messrs. Clinton and Jenkes, had completed the survey of a route for a canal to unite the Savannah with the Ogeechee river, and had ascertained that the work is practicable at a moderate expense. It is expected that the ground will be broken early in December next. Messrs C. and J. are now occupied in exploring the country between the Ogeechee and Altamaha, with a view of locating the route of a canal between those rivers.

Florida.

Florida canal.—Two routes have been proposed for a sloop canal across the isthmus of the Florida peninsula. The first or northern route, commences on the Atlantic at the mouth of the St. Mary's, which forms the boundary between Georgia and Florida, and proceeds up the channel of that river, nearly to its source, thence, by an independent canal about 18 miles long, to the Suwaney, which it meets in the upper part of its course, and thence down the channel of the Suwaney to the gulf of Mexico. The St. Mary's is a deep, sluggish river and will present no obstacles to sloop navigation; but the Suwaney has a rapid current. The summit level on this route will be suplied with water from the Okefinoco Swamp.—The second or southern route commences on the Atlantic at the mouth of the St. John's and proceeds up its channel to the mouth of the Black Creek, and after ascending that creek a short distance passes by an independent canal, about 12 miles long, across the country to the Santa Fe, a branch of the Suwaney, and thence down the channels of Santa Fe and Suwaney, to the gulf of Mexico. The summit level on this route will be supplied with water from the Black creek and Santa Fe above the points where they unite with the independent canal —On each of the above routes the distance from the Atlantic to the gulf of Mexico is about 90 miles, and the cutting, as we have stated, only 12 miles by one route and 18 by the other. For a ship channel, however, 24 or perhaps 36 may be required.

No accurate survey has yet been made of the country through which the Florida canal is to pass, but the subject is now before Congress, and there can be little doubt that measures will be adopted for the vigorous prosecution of this great work till it is completed. Its importance in a national point of view is incalculable. It will save by a short cut a navigation of 1200 miles around the peninsula of Florida and through the Bahama islands, where our vessels are now constantly exposed to imminent danger of destruction both from the rocks and pirates. The losses by shipwreck in a single year, it is said amount to more than sufficient to defray the whole expense of a canal.

Alabama.

Tennessee and Mobile canal.—At a meeting of the citizens of Cahawba, held on the 20th of May, 1823, for the purpose of taking into consideration the expediency and practicability of uniting the waters of the Tennessee with those of Mobile river, Mr. Beene stated that the portage between the navigable waters of the Okoa, a branch of the Hiwassee which unites with the Tennessee at Hiwassee garrison, and the Conasaugau a navigable branch of the Coosa, was measured by a correct mathematician, Mr. Robert Houston, in company with the Rev. Gideon Blackburn, of Tennessee, so long ago as 1810, and the distance was ascertained to be nine miles 214 yards across a beautiful level country, presenting no obstructions to the formation of a canal. The bed of the Conasanga was found to be only 51 feet below that of the Okoa, so that two dams and four or five locks, with nine miles of easy excavation, will complete the canal and open a passage for boats, at the proper season of the year, from the head waters of the Tennessee, in the state of Virginia, through the Coosa and Alabama rivers, to Mobile and the gulf of Mexico.

Florida and Louisiana.

Mississippi and Appalachicola canals.—It has been stated by gentlemen well acquainted with the country that by cutting only 12 miles, a perfect inland tide-water navigation may be made from the Mississippi river to the Appalachicola, a distance of 350 miles. The route is as follows:—From the Mississippi through the Iberville, (the obstructions in which are to be removed,) to Lake Ponchartrain; thence through Lake Borgne and Pascagoula bay, between the

islands and the shore, to Mobile bay, which may be connected with the Perdido bay by a cut of 4 1-2 miles, and this with the Pensacola bay, through the Grand Lagoon by a cut of half a mile, [in both cases through an easy soil and level country;] thence, through Santa Rosa Sound and bay, 40 miles, to the Choctawachie river, which may be connected by an easy cut of five miles with the St. Andrew's bay, through which you pass 24 miles, and thence by a cut of two miles, to the Chipola river which discharges itself into the Appalachicola.

At the last session of Congress, a committee in the House of Representatives recommended an appropriation for the survey of this route, the importance of which will at once be perceived, as it is virtually an extension of the Florida canal, or rather the completion of that great line of inland tide water navigation, which extends with scarcely any interruption from Boston to New Orleans.

Louisiana.

Carondolet canal.—The Carondolet, which was completed in the year 1817, extends from a basin or ditch in the rear of the city of New Orleans 1 1-2 miles to the Bayou St. John, which communicates with Lake Ponchartrain. A sloop navigation, from the city to the lake, is thus proposed. The canal, however, does not enter the Mississippi, one or more locks being necessary before that can be accomplished.

During the last summer, the Board of Engineers for internal improvements, by order of the United States government examined the communications between the Mississippi and Lake Ponchartrain, with the view of ascertaining the practicability of connecting them by a canal, to be navigable by sloops, that would possess greater commercical and military advantages than those afforded by the communication through the Bayou St. John and Carondolet. The Board examined two routes; one from the city of New Orleans, to enter Lake Ponchartrain about two miles east of the mouth of Bayou St. John; the other from a point on the Mississippi, about two miles below New-Orleans, to enter Lake Ponchartrain about five miles east of Bayou St John.

A sloop canal at this place is of great importance in a national point of view, as it would enable the government to use the same naval force both for the defence of the Mississippi, and Lake Ponchartrain, the two great avenues by which New Orleans may be approached from the sea.

Kentucky.

Louisville and Portland canal.—The falls of the Ohio at Louisville are the only impediment to the navigation from Pittsburg to New Orleans, a distance of 2000 miles. Common boats can with difficulty pass these falls in summer, and the navigation is even during the freshets dangerous for large vessels. The attention of the Legislature of Kentucky, and of the inhabitants of the western country generally, has, therefore, been particularly drawn to the opening of a canal at that place, and a company was incorporated for that purpose nearly 20 years since. This company, however, did nothing but survey the ground; and last year another company was incorporated, who have taken up the business with spirit, and have already entered into a contract with a number of responsible men who have engaged to complete the work in October, 1827, for 370,000.

The canal must be dug in some places to a depth of 27 feet. The fall at low water is about 22 feet, and will require three locks of dimensions sufficient to pass ships of 400 tons, and drawing 14 feet of water. The canal will commence at Louisville, just above the rapids, and terminate at Portland, nearly two miles below.

Ohio.

Ohio and Erie canal.—The route of this canal commences at Portsmouth, on the Ohio, at the mouth of the Scioto, and proceeds up the valley of that river, on the eastern side, to the vicinity of Piketown, where it crosses the river on its surface, and proceeds in a northernly direction towards Chillicothe, near which it again crosses the river, and then continues its course along the eastern bank to the Big Belly creek, near the line which divides Pickaway and Franklin conties, where it receives a feeder, ten miles long, leading from the Scioto at Columbus. After receiving the Columbus feeder, the line leaves the valley of the Scioto, and proceeds in an easterly direction up the valley of Walnut creek, to the Licking and Walnut creek summit, between the head waters of those streams. To supply this summit with water, feeders are to be cut to the North, South, and Raccoon forks of Licking, and a large reservoir is also to be made near the line of the canal. From the Licking summit, the route of the canal proceeds down the valley of Licking creek to the mouth of the Rocky fork of Licking, and thence across to the valley of the Tomaka, and down that valley nearly to the

junction of the Tomaka with the Muskingum. From this point the level of the canal begins to ascend, and the route proceeds up the valley of the Muskingum to White woman's creek, near its junction with the Tuscarawas at Coshocton. Crossing this creek on its surface, it proceeds up the valley of the Tuscarawas, at first on the western, and afterwards on the eastern side of the river to the point, where its two head branches unite, not far from the southwest corner of Portage county. This point is in the centre of what is called the Portage summit, which extends for ten miles, viz. five miles along the banks of the Tuscarawas and five miles across the portage to Cuyahoga river. The Portage summit requires no feeder, as it receives an abundant supply of water from the Tuscarawas, at the point where it crosses that stream. From the northern extremity of the Portage summit the canal proceeds down the valley of the Cuyahoga, at first on the western and afterwards on the eastern side of the stream, till it arrives within six miles of Cleaveland, at the mouth of the river on lake Erie. For these six miles it is proposed to make use of the bed of the river by a tow path along the bank.

In ascending from lake Erie to the Portage summit, there is a lockage of 395 feet; in descending from the summit to the Tomaka, a lockage of 229 feet. In ascending from the Tomaka to the Licking summit, there is a lockage of 152 feet; and in descending from this summit to the Ohio, a lockage of 408 feet.

The Ohio river at Portsmouth presents a favourable situation for the termination of the canal, as the water is deep, the beach bold, and the anchorage ground protected from drift wood and ice.—At Cleaveland on lake Erie, there is a harbour sufficiently deep and capacious for the accommodation of all the merchant vessels which navigate the lake, but there is an obstruction at the mouth (occasioned by sand thrown up by the waves) which it is proposed to prevent hereafter by extending a pier 1056 feet in length from the shore into the lake.

The Erie and Ohio canal was commenced on the 4th of July 1825 It is 306 miles long, and its cost is estimated at 10,000 dollars a mile. It is expected that about 50 miles of the line, embracing the part nearest Lake Erie, will be completed next fall, and the remainder in the course of three or four years. The canal commissioners suppose that immediately on the completion of the whole line, the revenue from tolls, &c. will amount to 4 per cent. on the cost, and to 6 per cent. within five years after.

The canal commissioners of Ohio have been authorised by a resolution of the legislature, to make surveys, with a view to ascertain the practicability of a canal from the mouth of Little Beaver creek on the Ohio river, to a point on the Ohio and Erie canal, at the junction of Sandy creek with the Tuscarawas, near the line which divides Stark and Tuscarawas counties. A canal on this route would connect Pittsburg with Lake Erie. A convention of delegates from the counties of Portage and Trumbull, in Ohio, and the counties of Beaver, Mercer, Butler, and Alleghany, in Pennsylvania, is also to be held within a few weeks, to take measures for ascertaining the practicability of a canal from Pittsburg directly to the portage summit of the Ohio canal.

Ohio and Mad river canal.—The line of this canal commences on Mad river, one mile above its confluence with the Miami at Dayton, and proceeds down the Miami valley, on the eastern side of the river, 23 miles, to Middletown, where, by means of a short cut, the waters of the Miami can be let into the canal. From Middletown the line continues down the valley of the Miami to Hamilton, and then bears off from the river in a southeasterly direction, and passes into the valley of Mill creek, and thence to Cincinnati, where its terminates in a large basin, from which boats will descend, by locks, 108 feet, to the Ohio.—The canal is abundantly supplied with water, as Mad river alone is amply sufficient to feed the whole line from Dayton to Cincinnati. In addition to the supply from this source, however, it is intended to introduce the waters of the Miami at Middletown, and to bring them to Cincinnati, for hydraulic purposes. The descent from the basin at this place to the Ohio, as we have already stated, is 108 feet,* and the canal commissioners calculate, that without injuring the banks of the canal, or the mill privileges on the Miami, sufficient water can be brought from that river through the canal to Cincinnati, to keep in constant operation 60 pairs of 4 1-2 feet millstones. They look for an annual revenue of 20,000 dollars for water rents alone.

It is expected by the commissioners that the canal will be completed in 1827, and that in 1829 it will be in full operation and yield a revenue of 40,000 dollars, or more than 6 per cent. on the cost.

The Legislature of Ohio propose to extend this canal, at some future day, from Dayton, through the valleys of the

* This is when the water in the Ohio is low. At its usual height the difference would be less, and in high floods only 50 feet.

Miami, Loramies creek, Auglaize, and Maumee to Lake Erie. The line of a canal on this route has been surveyed by able engineers, who pronounce the work practicable. The whole length of a canal from the Ohio to Lake Erie on this route would be 299 miles, the amount of lockage 899 feet, and the expense 3,221,000 dollars. The summit level, which commences about 18 miles north of Dayton, extends for more than 60 miles within a single lock; and this level, together with the long line north of it as far as the Maumee river, a distance in all of 135 miles, must receive all its waters by feeders from the Mad and Miami rivers. The feeders themselves would extend 25 miles, thus making a canal line of 160 miles to be fed, from these two sources. The commissioners think that this is practicable, provided great care is taken to prevent the loss of water by leakage, &c.

Maryland and Ohio.

Chesapeake and Erie canal.—The route of this canal will commence on the tide waters of the Chesapeake and proceed up the valley of the Potomac nearly to the source of that river, and thence down either the valley of Cheat river or the Youghiogeny to the Monongahela, and down the Monongahela valley to Pittsburg. From Pittsburg it is proposed to descend the valley of the Ohio to the mouth of the Big Beaver, and thence to ascend the valley of the Big Beaver to Chenango, pass near Conneaut lake, and descend to the mouth of Elk creek on Lake Erie.

Two brigades of topographical engineers, and one brigade of civil engineers were employed during the past season, under the authority of the United States, upon the Chesapeake and Ohio section of the canal, and completed all the surveys upon that section requisite to enable the board of engineers to select the most eligible route, determine a general line of direction for the canal, and make a preparatory project and estimate, upon which the operations may be commenced. Two brigades of topographical engineers were also employed during the past season on the route between the Ohio and Lake Erie, and minute surveys of all parts of this route which presented any difficulties were completed, and general experimental lines surveyed of the remainder.

The board of engineers are now preparing a minute account of the surveys, estimates of expense, &c. of this canal, but as much time will be required to digest and collate them, they will not be able to present a full report to congress during their present session. "A general project, however, and

preparatory estimate for the Chesapeake and Ohio section of the canal, containing information sufficient to authorise the commencement of operations, will," they say, " if possible, be completed."

Indiana.

Maumee and Wabash canal.—A bill authorising the state of Indiana to open a canal through the public lands, to connect the navigable waters of the Wabash with those of the Maumee, which empties into lake Erie, was passed by both houses of Congress in 1824. In the course of the debate, Mr. Test, of Indiana, stated that the project was so perfectly practicable that he believed it would not require an excavation in any place more than 25 feet deep to make the canal a dead level. Its length would be only 15 or 20 miles, and the expense is estimated at $300,000. The bill requires that the survey should be completed within three years, and the canal within twelve years, and grants to the state of Indiana a strip of land 90 feet wide on each side of the canal.

Illinois.

Michigan and Illinois canal.—It is well known that lake Michigan can be connected with the head waters of Illinois river, by a short canal from Chicago river, which empties into the lake, a branch of the Des Plaines, which runs a southeast course, and approaches within ten or eleven miles of the lake, and then turning to the south west, blends its waters with the Theakiki or Cankakee. These streams approach within three miles of each other, and when swelled by heavy rains, actually unite, so that boats of 8 or 10 tons of burthen pass and repass from the lakes to the Mississppi. But although a communication is practicable on this route at certain seasons, yet at other times the rapids in the Des Plaines and the upper parts of the Illinois, interrupt the navigation. To open a communication which will avoid all obstacles, and which can be used at all seasons, it has been proposed to cut a canal from the lake to the foot of the lower rapids of the Illinois, near the mouth of Vermillion river, a distance of about 90 miles from Chicago. Below these rapids to the mouth of the Illinois, the river is deep, its current gentle, and the navigation unobstructed through the year. Those who are acquainted with the country say that there are apparently no obstacles in the way of the proposed canal. The ground gradually descends from the lake, the whole descent

is not more than 60 or 70 feet, and the line could be fed from the lake through its whole length. It is supposed that the expense would not exceed 1,000,000 dollars. No accurate survey, however, has yet been made.

Michigan.

Michigan and Erie canal.—The St. Joseph's river, which discharges itself into Lake Michigan, near its southern extremity, is navigable, without interruption from rapids or obstacles of any kind, by boats drawing 3 feet of water, for 130 miles from its mouth, and at this point it is believed by those acquainted with the country, that it can be connected by a short canal with the navigable waters of the Maumee, thus opening a direct communication from Lake Michigan to Lake Erie, and saving the circuitous voyage of 400 miles through lakes Michigan, Huron, and St. Clair. The line, however, has never been accurately surveyed.

POETICAL GENIUS AND IMITATION.

Genius is the produce of every soil, and the growth of every age and country. In its application to poetry, it takes things, characters, and manners as they rise; and, by a just and lively imitation, produces the effect upon those who were witnesses of the scenes, and are best qualified to recognize and to respond to the poetical imitation. If the things, characters, and manners, which form the genuine resources of poetry, are known to change with the change of times and places; if, from the temperature of climates, the influence of politics, the prevalence of civil and religious persuasions, and the dominion of fashion; if, from some causes which we know, and more which we do not know, the scene of human life and manners is shifted with every age and country; the poetical model formed by Aristotle, from the works of Sophocles and Homer, however perfect as far as it extends, is constructed upon too narrow and confined a scale, to form an universal law of poetical composition. However adapted to the manners and sentiments of ancient Greece, however admirable in itself, as holding out a picture of the dignity and simplicity of the classic ages, and however incomparable as a specimen of the most refined and polished taste, the poetics of Aristotle, or the art of poetry of Horace, should be considered only as a general and imperfect guide,

to be applied with much caution and reserve, and with a particular attention to the changes made in the circumstances of time and place.

Poetical imitations are always the most perfect, the most proper, and the most effective, when they are made directly *from things that are;* when the poet's feelings are themselves excited, his genius enlivened, and his imagination warmed, by present objects, whatever they may be: and not when they are imitations of *things that were*, as presented to the feelings, and represented by the imagination, of Sophocles and Homer, and copied from their works. This is an imitation of an imitation, and can at best be only like an excellent copy of a fine original picture. However perfect the model, there is a coldness and languor inseparable from this *secondary imitation*, which must repress all the native fire of the poet, and sink him into a disgraceful inferiority.

True poetic genius in these latter ages never glowed with such force and brilliancy, as in the works of Spencer, and Shakspeare, Dante, and Ariosto, who were unacquainted with the ancient rules; or in the Paradise Lost of Milton, whose immortal poem did not admit their application. And if another Aristotle should rise up to analize the works of these more modern bards, we should receive a new code of poetical laws, superior in some respects, however inferior in others.

Instead of improving the judgment and correcting the taste, too implicit a devotion for the critique of Aristotle, and too partial a reverence for the specimens of antiquity, have tended to cramp the poet's genius, to pervert the judgment of the critic, and to abridge the privilege of the art.

From the same narrow prejudice and superstitious veneration of antiquity, Architecture has experienced the same, or similar fortune. The Grecian orders of architecture, however excellent, are not adapted to all countries, to all climates, and to all materials; nor are these models accommodated to many of the uses and purposes of modern life. While we reverence these remains of classical antiquity, we should not suffer ourselves to be blinded by that reverence so far as to neglect and disregard another species of architecture, of which we have many admirable specimens; which, however inferior in its materials, and in its ornaments, is more various and extensive in its expression, more adapted to the climate, and to many of the uses of the country in which we live.

Among the best English poets are reckoned Shakspeare,

Thomson, Goldsmith, Pope, and Cowper. But none of these writers was eminent for his classical attainments; and none of them, except Pope, has suffered the powers of his genius to be repressed by the rules of Aristotle and Horace. It is the opinion of all impartial critics, whose judgment is not vitiated by a superstitious veneration of antiquity, that Shakspeare would not have been the first of dramatic poets, if he had received a classical education.

"If Shakspeare," say the authors of "Claims of Literature," "had been a profound scholar, in the common sense of the word, he would not have produced those dramas, which, sprinkled as they are with errors and faults, astonish us by their excellencies. Penetrated by reverence for the ancient productions of the dramatic art, his first essays, like those of other scholars, would have been in criticism and imitation; and habit would have checked and suppressed that immediate intercourse with nature, and all those novel combinations and original conceptions, by which he holds the whole dramatic world at his feet."

For the Port Folio.

ON THE ECONOMY OF NATURE.

From the French of M. Cabanis.

ALL nature is in motion; all bodies are in continual fluctuation; their elements combine and separate and they take successively a thousand transitory forms, and these metamorphoses, the necessary consequence of continual action, preserve the universe in perpetual youth.

With little reflection it is easy to see that the internal motions of bodies must give rise to destruction and reproduction, and that the condition of the parts is subject to continual change. Thus, the nature of the body may be understood, though the nature of its elements, and the cause of its existence may remain in impenetrable obscurity.

The duration of the existence of various bodies, under their proper form, and the new appearances which they can assume, depend, no doubt, on their constituent elements; but they depend much more on the circumstances under whose influence the body was formed. It appears that these circumstances, and the operations to which they give rise, control the peculiar natures of the elements, and that the principal artifice of nature consists in the manner in which they are modified.

When we cast a general and scrutinising glance over this immense variety of combinations which are effected by the reproductive motions, we can discern certain processes more or less general, by which others may be classified. These compositions and decompositions, called chemical, are produced by laws infinitely less simple than those of the attractions of large masses. Organic beings owe their existence and their preservation to laws more recondite than those of elective affinities; and between the vegetable and animal creation, although both are governed by laws which are not properly, either mechanical or chemical, yet the hand of nature has established between them, certain differences by which each is distinguished and arranged; and, indeed, between vegetable and vegetable, animal and animal, we can perceive certain shades of difference which prevent, even those species which most nearly approach each other, from being confounded. In those plants, whose organization is the most simple, we can perceive the operation of laws peculiar to organic bodies; we see in the productions of the various parts of the plant, many distinct traits absolutely unknown in the animal kingdom. Many animals whose systems appear to be but mere sketches of organization, exhibit, nevertheless, in this unfinished state, certain phenomena never observed in inanimate bodies. In vegetables, gum or mucilage is first formed: passing to animals that live exclusively or principally on vegetables, mucilage undergoes a new degree of elaboration; it becomes transformed into gelatin, mucus and lymph, coagulable and fibrous. By the action of the vessels of the plant, by mixture with air and other gases, in a word, by all those processes comprised in the term vegetation, mucilage becomes capable of organising itself, first into spongy tissues, then into ligneous fibres, into bark, leaves, &c. In the operations which constitute animal life, gelatin, elaborated in various degrees, organises itself into cellular tissue, into living fibres, vessels, and osseous structure; so that for almost every phenomenon of vegetation, we have an analogous operation in the animal system.

In examining mucilage, we perceive that it possesses a strong tendency to coagulation; so that as the water which holds it in solution is abstracted, its particles approach and the mass becomes viscid: if the dissipation of the water is rapidly effected, the mucilaginous residue forms only a confused and irregular mass. But when the water is slowly evaporated, we discover here and there elongated striæ which cross each other, and in a short time we perceive that these

striæ, as they are multiplied and approach each other, give a regularity of form to the mass, presenting rays and interstices, the partitions of which are easily discoverable by the assistance of the microscope.

Meanwhile, if we observe gelatin, under analogous circumstances, it will appear that its tendency to coagulation is still stronger than that of mucilage. Combined, or simply mixed with fibrin, (which is nothing more than one of its forms) it organises itself directly into fibres, more or less tenacious according to the temperature at which its superabundant moisture is evaporated, as regular in appearance, as in the case of the filaments of mucilage, as the experiment has been conducted with care and patience.

We have said that vegetable products are possessed of properties which are not found in the mineral kingdom, and that the products of animal matter differ essentially from those of vegetable. Various combinations of volatile matter spread throughout nature, and the production of certain gases, which are developed by organic bodies, appear, also, to determine this difference. We ought, in the meantime, to observe, that in many plants, whose peculiar and piquant savour is generally pleasant to animals, and which are capable of renovating their enfeebled digestive powers, they discover the traces of a peculiar gas which they are peculiarly capable of elaborating, a gas which is disengaged in great quantities by decomposition in the intimate parts of their structure. In other vegetables, particularly in grains, from which civilized people derive a great proportion of their nourishment, chemistry has demonstrated the existence of a *gluten*, which has a remarkable analogy to the fibrin of animals. Separated from the mucilage which usually accompanies it and conceals its properties, gluten resembles a corrugated animal membrane; its fibres yielding to distending force, and rapidly resuming their former situation upon its removal: finally, to render the resemblance complete, they (*i. e.* the fibres of gluten, *tr.*) exhale after a short time, the odour of the animal excretions and the same gases which chemistry detects in the latter. But these observations, of which it is necessary to take notice, are not to be used as arguments that we cannot distinguish between the products of these two great divisions of organic structure: allied as they are by many points of resemblance, they are still distinguishable by some essential characteristic. On the other hand, when these points of analogy between animal and vegetable matter are sufficiently multiplied by further observation,

they may serve, at some future day, to develop the mystery of organization.

Mucilage, it appears, possesses the property of becoming thick, and forming itself into fibres, more or less firm and elastic, according to the circumstances in which it is placed; animal gelatin and fibrin possess the power of forming fibres and membranes of a tenacity and elasticity, still more remarkable. Still, however, there is no plant in the drop of mucilage which becomes tenacious, neither does the drop of gelatin contain an animal. Whence, then, is this peculiar *life*, of which both are susceptible?

Whatever may be our idea respecting the nature of the cause which determines the organization of vegetables and animals, or the conditions necessary to their development, we must admit the existence of a vivifying principle or faculty, with which the germs of organized beings are naturally endowed.

This is the most astonishing operation that we meet with in the study of creation, and it is covered by an impenetrable veil of mystery, and we are able to perceive only a few of the more remarkable phenomena of its existence. But we know that in all vegetables, and in the greatest number of animals, the matter of their rudiments or their rudiments themselves, already exist; and they exist independently of the cause which can endue them with life or render them prolific. This latter principle, in combination with the preceding, forms an union, whose duration depends on certain peculiar circumstances. In the vegetable, it is connected with organs little known, but undoubtedly existing in the cortical system. In the animal, it resides in the nervous system, from whence it exerts its influence throughout the whole system, so long as nothing obstructs the action of the vital organs.

The observation of the phenomena which succeed the amputation of a limb in those animals which are possessed of the power of reproducing their excised parts, the phenomena attending the process of suppuration, of cicatrization, of ossification: the formation of the corium of the blood, finally, an attentive examination of membranous and lymphatic coagulations, which often cover the vicera in inflammatory affections, enable us to see that fibrin and gelatin are the true constituents of membrane, of which are formed vessels, glands, the envelop of nerves, &c. and that they contain the principles of muscular fibres and of osseous structure; and if it is true, as I have shown it to be very probable, that the

organized muscular fibre is produced by a combination of the nervous pulp and cellular tissue, the elements of the animal body are reduced to *gelatin*, either simple or fibrous, and the medullary part of the nerves. However this may be, the state of the muscles always coincides with that of other structures, evidently of cellular tissue; so that the consequences remain the same, with regard to the doctrine that we have at present in view, respecting the physical dispositions of the organs in various stages of life, and the direct influences which these dispositions exert over the moral and intellectual functions.

Thus, the successive states (or the changes) of the organic system appear to depend upon the condition of the nervous and cellular tissue, and the variations to which the conditions of the several faculties are liable may be attributed to principles equally simple.

In the process of vegetation, mucilage is daily, more and more elaborated. During the infancy of plants, it is almost entirely aqueous; it is capable of acquiring by repose, but little tenacity, its taste is scarcely perceptible; and the oils and salts and other active principles are not combined in it until the plant acquires its full development.

In young animals, the fibrous gelatin appears to contain much mucilage, their juices have a mild and negative character, and decoctions of their parts abound in mucous matter, capable of a long acid fermentation before they putrify. They have but little of the odour peculiar to the animal; sometimes none at all. They furnish but a small quantity of ammonia: in a word, they resemble the vegetable matter from which they are derived.

But soon life begins to act with a force continually increasing, on the humours, apparently homogenous in various animals, and in various parts of the same animal, and gives to each of the humours its peculiar character: it distinguishes them in races, in individuals, and in parts of the same individual. Their qualities thus continually advancing towards perfection, they at length acquire a predominance over the solids, producing in these latter strong and permanent contractions, which in unison with other causes, hasten the decline of vital energy.

In this train of operations, which develop the animal and the vegetable, the existence and prosperity of one depends on the existence and the prosperity of the other. The vegetable appears to absorb from the atmosphere certain superabundant principles, or forcing adulterations which are detrimen-

tal to animal life, and also expire large quantities of that æriform matter, which may be considered as the proper aliment of the vital flame. On the other hand, the gaseous products of the respiration of animals which are incessantly exhaled from their bodies, and the products of their decomposition are the very principles which give support and energy to vegetation.

If it be true, that plants render the earth more inhabitable for animals, and that animals contribute to its fertility—if it be true that animals and vegetables afford each other nourishment, so as to preserve a state of equilibrium or mutual dependence between the two kingdoms, and that the atmosphere would become contaminated in process of time, when the animated bodies should become sufficiently numerous, the obstacles in the way of an accumulation of animals are compensated by great advantages. The various species, in becoming food for each other, subject the animal juices to repeated elaborations, and a progressive refinement, on which the superiority of the carnivorous races, in all probability, depends.

Passing from one animal to another, gelatin becomes more and more animalized, as in passing through the several organs of one animal its assimilation to certain humours and its various transformations become more entire and perfect. We may imagine the man to say to the herbivorous animal, "prepare for me the plants whose nourishing juices my feeble stomach is not able to extract," and to the carnivorous, who, like himself, derives sustenance from animals, "elaborate still more perfectly the juices already modified by the influence of sensibility—it is to you that I look for concentrated aliment, which I can appropriate to my wants with little exertion of my own assimilating organs."

Those vegetables which by chemical analysis afford the principles most analogous to animal matter, are the best adapted to the nourishment of animated beings, especially those which contain the greatest proportion of these principles in a given bulk. The cerialia which contain glutinous matter, furnish in abundance the principle proper to repair the waste of the vital frame; in other words, they are very nourishing, which has been observed by the most ancient and civilized nations. Strong decoctions or the jellies of flesh, particularly of the flesh of carnivorous animals, are the most concentrated forms of aliment, the most sapid and restorative, and which are most rapidly and easily assimilated.—This is evident from daily observation, and is demonstrated

by certain physiological and pathological facts, one of which I give on the authority of Lower:

"A young man suffering under a profuse hemorrhage, for the suppression of which unavailing efforts were made, was sustained by strong soups, or in fact, the juices of meat. The hemorrhage continued, and the fluid which was poured out was scarcely coloured, and appeared by its odour and taste, to be the same juice of meat, by which the patient was sustained and which circulated in the vessels in place of blood. In the meantime the patient recovered his health and acquired, as our author states, an athletic constitution. I have observed two instances in all respects similar to this." (tom. I, p. 194.)

DISCOVERIES IN AFRICA.

Narrative of Travels and Discoveries in Northern and Central Africa, in the years 1822, 1823, *and* 1824, by Major Denham, Captain Clapperton, and the late Doctor Oudney, extending across the Great Desert to the Tenth degree of Northern Latitude, and from Kouka, in Bornou, to Sackatoo, the capital of the Felatah Empire. With an Appendix, Plates, and a Map. 4to. pp. 644. London. Murray. 1826. Boston, reprinted.

[Monthly Review.]

THOUGH not disposed after a full consideration of their claims upon our approbation, to magnify the merits of the two adventurous travellers who have presented the public with this ponderous and costly volume, yet we cannot deny them the praise that is always due to perseverance, enterprise, and undaunted coolness, exhibited under circumstances of no ordinary difficulty and danger. Major Denham particularly seems to be endowed with a buoyancy of spirits, which even the severe privations and sufferings inflicted by the deserts and climates of Africa appear to have had little power to affect. Of his prudence we cannot speak so highly. Indeed we shall have occasion to see that by inconsiderately attaching himself to a party of Arabs, who had set out upon an expedition of plunder against the Felatahs, he not only exposed himself and the other members of the mission to serious consequences but hazarded the success of any future attempt that may be made to conciliate one of the most powerful and intelligent tribes in central Africa. We admit of course, that his motive in joining the expedition was to use the opportunity which it afforded him of penetrating a country before untrodden by Europeans, and we cannot but

admire the firmness which he displayed on the occasion. But if he had consulted his colleagues, or had given the matter sufficient consideration, we presume that he would have abstained from the course which he pursued. Not only was it incumbent on him as a British soldier to avoid the ranks of a predatory band, but it was inconsistent with policy, which should have overruled every other suggestion, to take the part of one tribe against another, in a country where the different tribes are in a state of constant mutual hostility, and where it is our interest, or at least our desire, to conciliate every portion of the population.

Captain Clapperton seems to have conducted that part of the expedition which was allotted to him with singular prudence and success. He was fortunate indeed, in being placed among a nation less savage than those whom Major Denham visited, and this good fortune he improved to its utmost extent by his conciliatory manners, taking care, at the same time, to preserve, in every situation, the respect due to his uniform and his rank. Perhaps he carried this feeling, on some occasions, a little farther than he need have done, in refusing, like some of our Oriental ministers, to salute the reigning authorities according to the established custom of their country. Such pride is, of all others, the last that should be cherished by an officer who is engaged in the public service, and whose business it is to advance that object, even at the expense of little personal compliances with etiquette, that really are not in themselves worth a moment's consideration. They are the tax which savage vanity requires of superior civilization, and it ought to be paid with readiness and good humour.

Dr. Oudney's share in the contents of this volume is, unfortunately, very little, and that little uninteresting. Before he left Europe he was afflicted in his lungs, and the variable climates which he encountered in Africa materially accelerated his dissolution. His premature death was a severe loss to the mission, as his acquisitions in geology and in literature were incomparably superior to those of his companions. In consequence of the early failure of his assistence, their journals are extremely defective in one of the most essential qualifications of a book of travels, an accurate and animated description of the face of the country, the character of its mountains, and of its mineral and vegetable productions. Neither Denham nor Clapperton has given us any intelligible sketches of the scenery which they traversed, if we except two or three of the plates; and when we arrive at the end of their

labours, we are almost as ignorant of the general features of the country through which we have accompanied them as when we set out. It is for this reason, we presume, that Mr. Barrow, who edits Clapperton's journal, charaterises that officer and his colleague as "pioneers of discovery," clearing the way for others who may come after them rather than as masters of the road themselves. To this praise they are entitled, and we must add, also, that they fortunately were able to take solar and lunar observations, which have enabled them to contribute some very important additions to the geography of Africa, as well as to correct several extravagant errors which had long prevailed in it.

The real extent of their 'Discoveries' is so limited as to have produced in us something like a feeling of disappointment, which was not a little aggravated by the pompous appearance of the volume, and promises of the preface, as well as the reports which have for some time prevailed of the extraordinary success that attended the mission. We are not favoured with the instructions which were given to it by the noble secretary of the colonial department, but we believe that its principal object, so far as geography was concerned, was to follow up the mission of Mr. Ritchie, and Captain Lyon, to ascertain the course of the Niger. This important question, the recent mission has, however, only involved in greater obscurity than ever. The chief political purpose of the mission was to reach Timbuctoo, and this it left wholly unaccomplished.

In order to effect both these leading points, Captain Clapperton, Dr. Oudney, and Major Denham, were directed to proceed by Tripoli to Mourzuk and Kouka, both in a line nearly due south of Tripoli. The two former officers made a short excursion from Mourzuk westwards, but their final purpose was to proceed from Kouka westwards to Timbuctoo, while Major Denham was still to penetrate as far south as he could, and occasionally to explore the countries in an eastern direction.

The mission left Tripoli in March, 1822, provided with a sufficient number of horses, camels, and servants, and contrary to the usual custom of English travellers in Africa, they wore their usual English dresses. It is satisfactory to find that on no occasion had they reason to regret their determination on this point. On their arrival at Sockna, half-way between Tripoli and Mourzuk, they were welcomed by the governor and principal inhabitants, accompanied by hundreds of the country people, who repeatedly hailed the strangers as

"Inglesi! Inglesi!" They reached Mourzuk on the 7th of April, without experiencing any other inconveniences than those so usual in Africa, the want of good water, and now and then a sand-storm. Here, however, they experienced a severe disappointment. Though they had letters to the Sultan of Mourzuk, from the Bashaw of Tripoli, directing that every assistance should be given in order to forward them on their journey southward, they were told that they could not proceed to Bornou without an escort of two hundred men, and that the preparations for this purpose would necessarily detain them at Mourzuk until the following spring. Major Denham returned to Tripoli, to represent this unexpected state of things to the Bashaw. The result was, that, after some delay, Boo-Khaloom, a rich merchant of the interior, who happened to be at Tripoli, was appointed, with an escort, to convey the mission to Bornou.

This Boo-Khaloom was an extraordinary sort of a person, —half merchant, half bandit,—who exercised very inconsiderable influence on the subsequent proceedings of the mission. He headed the escort, mounted on a beautiful white Tunisian horse, the peak and rear of his saddle covered with gold, and his housings of scarlet cloth, richly bordered. His dress was also very splendid, and considering himself as the representative of the Bashaw, he assumed an imposing air of authority. The escort consisted chiefly of Arabs, under the command of their own sheikh, whose enlistment was procured upon conditions unknown at the time to Denham, but which afterwards occasioned no little trouble to all the parties. The cavalcade, or, to use the African term, the kafila, entered Mourzuk on the 30th of October, where Denham found his colleagues confined to their beds by severe illness, and both extremely reduced in their persons.

Dr. Oudney and Captain Clapperton had whiled away some of the months of the distressing interval, that had elapsed between Major Denham's journey to Tripoli and return to Mourzuk, in an excursion to Ghraat, to the westward of Mourzuk, of which we have an imperfect journal from the pen of the Doctor. He describes the greater number of the inhabitants as Tuaricks, who differ considerably from the people of Fezzan. They are of a warlike appearance; and in order to preserve their features from the influence of the sun, they muffle them up, so as to leave but a small part visible. They are fond of a nomade or wandering life, and have a sovereign contempt for those who live in villages or towns. The country is mountainous, and the Tuaricks usually pre-

fer the most secluded parts of it for their temporary abode. Dr. Oudney found, in the course of his excursion, a Roman building, whence he supposed that this was the road taken by some of the legions into the interior. In a valley called Trona, he saw a lake, from which a considerable quantity of that substance is obtained. Trona, or carbonate of soda, is formed by crystalization at the bottom of the lake, when the water is sufficiently saturated. The cakes vary in thickness from a fine film to two or three inches. In the winter it is thickest and best; and the lake, though small, yields 400 or 500 camel-loads of it every year. It is very much used throughout northern Africa for its medical qualities: a considerable portion is sent to Tripoli, whence it finds its way to foreign markets.

Every exertion was made by Boo-Khaloom to get away as soon as possible from Mourzuk, which is an extremely unhealthy place. Mr. Ritchie and captain Lyon had suffered severely during their stay there, and all the members of the present mission were afflicted, while they were detained in that town, with one complaint or another. From the numerous arrangements, however, which were necessary to be made for the provisioning of so many persons, during a journey through a country destitute of all resources, Boo-Khaloom was not able to complete his preparations until the 26th of November, when the mission quitted Mourzuk for Kouka. They had a most fatiguing time of it in the early part of their route. The wells were generally surrounded by the bleached skeletons of slaves, who had been left to perish there by their savage masters. Upon arriving in the Tibboo country, they found numerous villages, and wells, and lakes that produced great quantities of salt and trona. The inhabitants were, however, industrious and hospitable; and those in the large towns, particularly the females, were of a superior class, 'some having extremely pleasing features, while the pearly white of their regular teeth was beautifully contrasted with the glossy black of their skin.' After leaving Bilma, they had to bid adieu to every appearance of vegetable production, and to enter on a desert, which required thirteen days to cross. The road lay over loose hills of fine sand, in which the camels sunk nearly knee-deep. The only landmarks by which the traveller can steer his course in these wilds are certain points in the dark sandstone-ridges, which from time to time raise their heads in the midst of this dry ocean of sand, for the face of the desert is constantly changed by the winds, which shift the sand-hills from place to place.

"Tremendously dreary are these marches: as far as the eye can reach, billows of sand bound the prospect. On seeing the solitary foot passenger of the kafila, with his water-flask in his hand, and bag of zumeeta (parched corn) on his head, sink at a distance beneath one of these (sand hills,) as he plods his way alone, hoping to gain a few paces in his long day's work, by not following the track of the camels, one trembles for his safety:—the obstacle passed which concealed him from the view, the eye is strained towards the spot in order to be assured that he has not been buried quick in the treacherous overwhelming sand."—Denham. p. 29.

After the travellers quitted the desert, the face of the country gradually improved, until they arrived at Lari, where they had first a view of the great lake Tchad, 'glowing with the golden rays of the sun in its strength.'—'My heart,' says Major Denham, 'bounded within in me at this prospect, for I believed this lake to be the key to the great object of our search.' This belief, however, he ultimately failed to strengthen into certainty, nor indeed has he added to it any thing by way of support beyond very loose conjecture. The lake was covered with a multitude of birds; and near its borders Major Denham saw a herd of upwards of one hundred and fifty elephants feeding in grounds which are annually overflowed by its waters. Some of these huge animals he represents to be sixteen feet high—an enormous bulk, if, indeed, the Major be not mistaken. The kafila, on their approach to Kouka, waded through a still water called Chugelarem, which was said to be a branch of the Tchad, and to be increased considerably by the overflowings of that lake in the rainy season. They also crossed a very considerable river called the Yeou, 'in some parts more than fifty yards wide, with a fine hard sandy bottom, and banks nearly perpendicular, and with a strong current running three miles and a half in an hour to the eastward.' One of the Arabs said that this was the Nile, and that it ran into the Tchad. Upon this information, however, no dependence could be placed, as it is well known that the name of the Nile is popularly given to many rivers besides the one to which it alone belongs. The Yeou is at times considerably wider and deeper than the kafila found it, and it is represented on the map as flowing into the great lake.

Before the mission entered Kouka, (on the 17th of February, 1823,) they were in a state of great uncertainty as to the manner in which they should be received there. They were the first Europeans who had approached so near it. The accounts which they had concerning its population were confused and contradictory, and they did not know whether 'they should find its chief at the head of thousands, or be received by him under a tree surrounded by a few naked slaves.'

What, then, must have been their surprise to see soon in front of them a body of several thousand cavalry, drawn up in line, mounted on small but perfect horses, and regulating all their movements with admirable precision and expertness! The Sheikh's first general, Barca Gana, appeared to be a 'negro of noble aspect, clothed in a figured silk tobe' (shirt,) and the Sheikh's body-guard of negroes were habited in 'coats of mail, composed of iron chain, which covered them from the throat to the knees, dividing behind, and coming on each side of the horse: some of them had helmets, or rather skull-caps, of the same metal, with chin-pieces, all sufficiently strong to ward off the shock of a spear. Their horses' heads were also defended by plates of iron, brass, and silver, just leaving sufficient room for the eyes of the animal. The representation given in one of the plates of a negro thus mounted and equipped resembles in every thing but the helmet and countenance an European knight in the chain armour of the chivalrous ages. After a good deal of ceremony, the mission were admitted within the gates of Kouka, and kindly received by the Sheikh, whose personal appearance was prepossessing, animated by an expressive countenance and a benevolent smile. He had previously ordered huts to be built for them, and told them he would be happy to gratify their wishes in every respect. At their next interview the Sheikh betrayed a spark of that vanity which seems to be natural to man in every clime and in every stage of society.

'The Sheikh showed evident satisfaction at our assurance, that the king of England had heard of Bornou and himself; and immediately turning to his kaganawha (counsellor,) said, "This is in consequence of our defeating the Begharmis." Upon which the chief who had most distinguished himself in these memorable battles, Bagah Furby, (the gatherer of horses,) seating himself in front of us, demanded, "Did he ever hear of me?" The immediate reply of "*Certainly*" did wonders for our cause. Exclamations were general; and, "Ah! then, your king must be a great man!" was re-echoed from every side.'—Denham, p. 68.

The travellers had presents of provisions, not in baskets, but by camel-loads. Bullocks, wheat, rice, butter, honey, and fish, were placed before their huts in such abundance, that the Sheikh must have had an extraordinary idea of their powers of consumption. One of the first novelties which they witnessed at Kouka was the market.

'Slaves, sheep, and bullocks, the latter in great numbers, were the principal live stock for sale. There was at least fifteen thousand persons gathered together, some of them coming from places two and three days distant. Wheat, rice, and gussub, were abundant: tamarinds in the pod, ground nuts, ban beans, ochroes, and indigo; the latter is very good, and

in great use amongst the natives, to dye their tobes (shirts) and linen, stripes of deep indigo colour, or stripes of it alternately with white, being highly esteemed by most of the Bornou women: the leaves are moistened and pounded up altogether, when they are formed into lumps, and so brought to market. Of vegetables there was a great scarcity—onions, bastard tomatoes, alone were offered for sale; and of fruits not any: a few limes, which the Sheikh had sent us from his garden, being the only fruit we had seen in Bornou. Leather was in great quantities; and the skins of the large snake, and pieces of the skin of the crocodile, used as an ornament for the scabbards of their daggers, were also brought to me for sale; and butter, leban (sour milk,) honey, and wooden bowls, from Soudan. The costumes of the women, who for the most part were the vendors, were various: those of Kanem and Bornou were most numerous, and the former was as becoming as the latter had a contrary appearance. The variety in costume amongst the ladies consists entirely in the head-ornaments; the only difference, in the scanty covering which is bestowed on other parts of the person, lies in the choice of the wearer, who either ties the piece of linen, blue or white, under the arms, and across the breasts, or fastens it rather fantastically on one shoulder, leaving one breast naked. The Kanemboo women have small plaits of hair hanging down all around the head, quite to the poll of the neck, with a roll of leather or string of little brass beads in front, hanging down from the centre on each side of the face, which has by no means an unbecoming appearance: they have sometimes strings of silver rings instead of the brass, and a large round silver ornament in front of their foreheads. The female slaves from Musgow, a large kingdom to the south-east of Mandara, are particularly disagreeable in their appearance, although considered as very trustworthy, and capable of great labour: their hair is rolled up in three large plaits, which extend from the forehead to the back of the neck, like the Bornowy; one larger in the centre, and two smaller on each side: they have silver studs in their nose, and one large one just under the lower lip of the size of a shilling, which goes quite through into the mouth; to make room for this ornament, a tooth or two is sometimes displaced.'—Denham, pp. 69, 70.

Purchases are chiefly made by barter, or paid for by small beads, pieces of coral and amber, or coarse linen, which all the people manufacture, and is sold at the rate of forty yards for a dollar. The mission had not been many days at Kouka, when, through Boo-Khaloom, they received word from the Sheikh that 'they should be welcome to see any part of his dominions, but that out of them he could not suffer the mission at present to go.' The truth is, that these uncivilized rulers of central Africa have no conception of the motives which can induce foreigners to penetrate their remote and unhealthy dominions. They do not understand the curiosity of intelligent minds, and they suspect that some attack is secretly meditated against their own power, some design intended against their possessions or those of their people. It was even reported at Kouka, that one of the purposes of the mission was to build ships, in which they should embark upon the Tchad, and return to their own country, and then

that the white people would come and destroy them all! Some countenance was probably given to this rumour, by the fact that they were attended by a ship-carpenter, Hillman, who was found a very useful and faithful servant of the mission. The rumour, however, seems to have originated with some Mourzuk merchants, who had preceded them, and who no doubt apprehended that their trade in slaves, and in the produce of the country, would be injured by the strangers. Through the influence of Boo-Khaloom, however, the Sheikh was undeceived, and the presents which the mission gave him had a wonderful effect in their favour. He and the people of the town were particularly astonished by some rockets which were displayed for their amusement. Major Denham gives us the following as a sample of the best residences in Kouka. The habitation belonged to one of the sheikh's principal shouas, and consisted of two enclosures, besides one for his horses, cows, and goats.

'In the first of these divisions was a circular hut, with a cupola top, well thatched with gussub straw, something resembling that of the Indian corn: the walls were of the same materials; a mud wall, of about two feet high, separated one part from the rest, and here his corn was kept; and a bench of like simple composition, at the opposite side, was his resting-place: this was covered with mats; and his spears, and wooden bowls for water and milk, hung on pegs, completed the furniture: here was his own apartment. In the second division there were two huts rather smaller, about ten paces from each other, in which dwelt his two wives: they were called to the door, and desired to salute me; but on looking up, uttered a scream, and hiding their faces with their hands, crept back again so quickly, as to make me almost ashamed of my complexion.'—Denham, pp. 75, 76.

Kouka is a very considerable town, and at the distance of sixteen miles from it is Angornou, also a large and populous town, where the Sheikh resided before he built Kouka. Two miles farther south, stands Birnie, which is walled, and is supposed to contain ten thousand inhabitants, who reside in huts similar to those in Kouka. The travellers visited Angornou and Birnie in company with Boo-Khaloom. At the latter place they were received by the sultan with the most prodigal hospitality. No fewer than seventy dishes of mutton and poultry, baked, boiled, and stewed, were sent to their residence for their dinner, each of which would have served at least half-a-dozen persons. The Sultan reigns by sufferance of the Sheikh; and though he lives in a mud-edifice he affects all the pomp, folly, and bigotry of the ancient negro sovereigns.

'Large bellies and large heads are indispensable for those who serve the court of Bornou; and those who unfortunately possess not the former

by nature, or on whom lustiness will not be forced by cramming, make up the deficiency of protuberance by a wadding, which as they sit on the horse, gives the belly the curious appearance of hanging over the pummel of the saddle. The eight, ten, and twelve shirts, of different colours, that they wear, one over the other, help a little to increase this greatness of person: the head is enveloped in folds of muslin or linen of various colours, though mostly white, so as to deform it as much as possible; and those whose turban seemed to be the most studied had the effect of making the head appear completely on one side. Besides this they are hung all over with charms, inclosed in little red leather parcels strung together: the horse, also, has them round his neck, in front of his head, and about the saddle.'—Denham, pp. 78, 79.

The sultan generally appears in his court in a sort of cage; he is distinguished by wearing a larger turban than any of his subjects, and his face, from the nose downwards, is completely covered. Angornou is represented as the largest and most populous town of Bornou. It is said to contain at least thirty thousand inhabitants, and the huts are generally more commodious and extensive than those of Kouka. There is a public market once a-week, which the natives said was attended in peaceable times sometimes by eighty or a hundred thousand persons. Fish, flesh, and fowls, are abundant there. The only vegetables are tomatas and onions. Linen is so cheap that the males generally wear shirts and trousers. Want of the latter bespeaks extreme poverty. The principal demand is for amber and coral; pieces of brass are also much sought after, and readily bring money, whereas all other sorts of merchandize are paid for in slaves, or tobes. The men are well grown, but the mouth is large, the lips thick, and to a stranger the features appear ugly. Beauty of this description is all relative. Many of the people in the market, when they saw the white English faces, ran away from them 'irresistibly affrighted.' It would seem, however, that nature has constructed the organs of hearing in every order of the human race upon the same plan. Upon Denham's return to Kouka he showed the Sheikh a musical box.

'He was at first greatly astonished, and asked several questions, exclaiming, "A *gieb! gieb!*" "Wonderful! wonderful!" but the sweetness of the Swiss Ranz-des-Vaches which it played, at last overcame every other feeling: he covered his face with his hand and listened in silence; and on one man near him breaking the charm by a loud exclamation, he struck him a blow which made all his followers tremble. He instantly asked, "If one twice as large would not be better?" I said "Yes; but it would be twice as dear."—"By G——!" said he, "if one thousand dollars would purchase it, it would be cheap." '—Denham, p. 85.

The major very adroitly presented the box to the Sheikh, and thus advanced at once to the highest degree of intimacy and

favour with him. This circumstance Denham turned to immediate advantage, by obtaining permission to visit the Tchad, which lies about fifteen miles eastward from Kouka. He observed ' evident proofs of its overflowings and recedings near the shores; but beyond was an expanse of waters as far as the eye could reach east and south-east.' The lake produces fine mullet, in great abundance, which is easily captured, and almost as easily cooked; ' a stick is run through the mouth of the fish and quite along the belly to the tail: this stick is then stuck in the ground, with the head of the fish downwards, and inclined towards the fire; and by turning them constantly by the tail, they are most excellently dressed. Great numbers of elephants, buffaloes, and antelopes, were seen in the neighbourhood of the lake; but it is infested by such myriads of mosquitoes, and other venomous insects, that it is scarcely possible for man or beast to remain long on its immediate borders. Had it not been for this intolerable nuisance, Denham says that as he pursued the course of the water he saw spots where he could with delight have pitched his tent for a week. Some of the villages through which he passed were quite new, and occupied by emigrants from Kenemboo, ' than whom,' he says, ' I never saw handsomer or better formed people.' On this occasion, however, Denham acquired little information concerning the lake, his excursion was limited, and he returned to Kouka.

We have already said that the real motives of the Arabs in joining the escort under Boo-Khaloom were not quite apparent at the commencement of the journey. They now became much more so. Boo-Khaloom's purpose was to dispose of his merchandise to the best advantage: the great object of the Arabs was to be led to Mandary upon an expedition of plunder, or, as they call it, a ghrazzie. They began to mutiny; and were so violent, that Boo-Khaloom was obliged to yield to their demand, although it is due to his memory to say that he resisted the scheme as far as it was possible. It was to this expedition than major Denham so imprudently, as we think, attached himself in order to have an opportunity of exploring the Mandara country. He took this step against the positive directions of his friend the Sheikh; and, after some delay, on the 17th of April, he joined the Arabs and the Sheikh's people on their march, the former under the command of Boo-Khaloom, the latter under Barca Gana, already mentioned. Their course was due south of Kouka. They passed on the 18th and 19th through Deegoa, a large walled town, containing a population of thirty thou-

sand; Affagay, another large and populous town, and several villages. The road consisted of several narrow paths, passable only for one horse at a time, and these obstructed by prickly trees which hang over them. Twelve pioneers, who carried long forked poles, were employed to keep back the branches; and as they moved on, they gave animation to the march, by perpetually crying out something about the road.

'For example: "Take care of the holes!—avoid the branches!—Here is the road!—take care of the tulloh!—its branches are like spears, worse than spears! Keep off the branches!"—"For whom?" "Barca Gana."—"Who in battle is like rolling thunder?"—"Barca Gana!"—"Now for Mandara!—now for the Kerdies!—now for the battle of spears!—Who is our leader?"—"Barca Gana."—"Here is the wadey, but no water."—"God be praised!"—"In battle, who spreads terror around him like a buffalo in his rage?"—"Barca Gana." '—Denham, p. 106.

On the 20th they reached Delahay, 'a spot surrounded by large wide-spreading acacias, affording a delightful shade' and abundance of excellent water, a most acceptable blessing where the thermometer was seldom under 113° in the most secluded place. The first town which they entered in Mandara is called Delow: it contains 10,000 inhabitants, has springs of good water, and in the neighbouring vallies are odoriferously shrubs and fig-trees. They were received in a friendly manner by the sultan of Mandara, who met them on a rising ground, surrounded by five hundred horsemen, who were finely dressed in Soudan tobes of different colours, bornouses of coarse scarlet cloth, and large turbans of white or dark cotton. Their horses were beautiful, and they managed them with great skill. 'The Sultan's guard was composed of thirty of his sons, all mounted on very superior horses, clothed in striped silk tobes; and the skin of the tiger-cat and leopard formed their shabracks, which hung fully over their horses' haunches.' The Sultan was an intelligent little man of about fifty, with a beard dyed 'of a most beautiful sky-blue.' Upon learning that Major Denham was not Moslem, he had no further intercourse with him. The sultan refused permission to Boo-Khaloom to invade the country of the Kerdies, an inferior tribe, which supplies the sultan with numerous slaves. Boo-Khaloom asserted the Kerdies to be christians, but Denham disbelieved him, from the uncouth appearance which some of them exhibited, and their propensity to eat horse-flesh; he had, however, no means of ascertaining whether the assertion was really devoid of foundation. After being delayed some days by the indecision of the sultan, the marauders moved on the 25th of April, to the

east of Delow. The country is here mountainous. In the vallies they found verdure and shade, and saw several of those enormous trees called gubberah, which resemble the fig-tree without its fruit. Their trunks commonly measure ten and twelve yards in circumference near the root, and their branches sometimes cover more than half an acre of ground.

As the party advanced, the mountain-scenery improved in beauty and richness, and they saw before them, to the south, mountains still higher, and more magnificent. They proceeded through a frightful and difficult pass called the Horza, after which nature seemed to wear a new dress. Flowers, vegetables, and fruits, were abundant. On the road the expedition was joined by the sultan of Mandara, with a considerable force; and the whole body now exceeding three thousand men. They formed into regular columns on the morning of the 28th, and proceeded to attack some small towns inhabited by the Felatahs. We have already observed that the Felatah tribe, or rather tribes, are exceedingly powerful in the interior of Africa. They extend through the whole of Soudan quite to Timbuctoo, and they are found in great numbers at D'jennie on the Quolla. They have a peculiar language of their own. They are Moslem, and a handsome as well as brave race of people, wholly distinct from the negroes, and of a deep copper colour. They had several times conquered Mandara, but were at last driven from it to the mountains by the present Sultan, who deemed them a most formidable enemy, and was rejoiced at having an opportunity of directing the energies of Boo-Khaloom and his Arabs against them. After burning Dirkulla and another small town near it, and putting to death, or consigning to the flames the few inhabitants who were found in them, consisting chiefly of infants and aged persons unable to escape, they proceeded to attack Musfeia, in latitude 9° 10′ north, which was built on a rising ground among the mountains, and capable of being defended against double the force now brought against it. It was defended very resolutely by the Felatahs, whose weapons were the spear and bow and poisoned arrow. The Arabs soon took flight, a course of proceeding in which they were instantly followed by their auxiliaries, the sultan leading the way. Major Denham's horse was disabled by an arrow-wound, and it was with great difficulty he fled from the field, after being stripped absolutely naked by the Felatahs. The narrative of his escape is highly interesting, but too long to be extracted. All their baggage was abandoned to the enemy, and numbers of the invaders were speared to death, or

sunk under the effects of the poisoned arrow wounds. Among them perished Boo-Khaloom himself, who was wounded by an arrow in the foot. Thus terminated this expedition, in the signal discomfiture of those who planned it in injustice, and, as far as they were permitted, carried it on with cruelty. Major Denham unfortunately acquired little in the way of his mission to compensate him for the severe sufferings which he most unnecessarily brought upon himself.

Musfeia is distant from Kouka about 230 miles, but such was the haste with which the Arabian remnant of the expedition retreated, that major Denhan and they arrived at Kouka in about seven days after the battle. He lost almost every thing, his trunk, linen, canteens, azimuth-compass, drawing-case, and some sketches of the Mandara mountains. The inhabitants were unanimous in reporting that 'these mountains extend southward for two months' journey; and one who represented he had been twenty days south of Mandara said that he had travelled over mountains ten times higher than those of Mandara: he called them " mountains of the moon." ' If this account be true, and it is by no means improbable, the obvious conjecture is, that they belong to the same chain as the moon-mountains in which the Nile is supposed to take its rise. The same person spoke of several rivers and lakes which he saw in the course of his journey, one of which he represented as flowing eastward to the Nile.

On his return from Musfeia, major Denham, accompanied by Dr. Oudney, made an excursion westward to Soudan (now in ruins) with the Sheikh, who marched through that country in order to reduce the Munga people to obedience. The object of the expedition was effected, by the Sheikh's tact and management without any fighting, which was of the more importance, as they are a powerful race, and can bring ten thousand bowmen into the field. They are described as having all the simplicity, good nature and ugliness of the people of Bornou. The chief object of Dr. Oudney's and major Denham's attention was the river Gambarou, which is said, in some parts, to be as wide as the Thames at Windsor, but the water appeared quite stationary. They were told, however, that in the rainy season it flows in a strong current eastward, and in the map it is made to join the Yeou, which is tributary to the Tchad.

During the rainy season, the mission remained at Kouka. Rains incessantly fall during the months of August and September, increasing every day till about the latter part of September, when they sensibly diminish. This corresponds with

the inundation of the Nile, which is at its height on the 25th of September; but still it does not prove the existence of any communication between the Tchad and that mighty stream. During the rains, almost the whole face of the country round Kouka is covered with the waters; and the probability is, that when the bed of the lake overflows, a great portion of the superincumbent weight of waters finds its way into the Nile through many channels which, when the inundation is subsided, are no longer visible. While the rains prevailed, all the members of the mission, and, indeed, the greater number of the inhabitants, were extremely ill at Kouka. Towards the latter end of October, cool winds purified the air; and about the middle of December, Dr. Oudney and captain Clapperton set out with a kafila on their journey westward, while major Denham, who about the same time was joined by a new colleague, lieutenant Toole, proceeded on an excursion to Loggun, to the south-east of Kouka, in order to explore the course of the river Shary. In this object they were foiled by the fear of the jealousy of the sultan of Loggun; and in the course of their journey the climate was fatal to Mr. Toole, who is represented by his companion to have been a young officer of great promise. In the following April (1824) Mr. Tyrwhit, who, we believe, was appointed to act as consul at Kouka, arrived there, and in June he accompanied major Denham on an expedition to the eastern side of the Tchad, which was unattended by any satisfactory results. We regret to learn that Mr. Tyrwhit has also fallen a victim to the climate. After an excursion, equally fruitless, to the north-eastern banks of the Tchad, major Denham and captain Clapperton, (who had returned from his western journey) repassed their former road to Tripoli, and after an absence of three years reached England in safety.

The limitation of our space prevents us from following captain Clapperton in his very interesting journal. Dr. Oudney died at Murmur; and his companion, from causes which he does not detail, was not able to penetrate farther westward than Sackatoo, which, as well as a great part of the country round it, is under the rule of the Felatahs. One of the first questions asked by the sultan Bello related to major Denham's appearance with the party of Boo-Khaloom in that unfortunate expedition against the Felatahs at Musfeia. Captain Clapperton endeavoured to explain the matter as well as he could. Bello is described as an extremely intelligent person, very anxious to enter into commercial relations with England, for which the proximity of his dominions to the Bight of

Benin affords great facilities. He has also promised to do every thing in his power to put a stop to the slave trade, which has been principally carried on in that quarter. The whole of the Felatah country is described as superior in many respects to those parts of Africa, which were traversed by Denham. According to popular report Mungo Park's death occurred at a very short distance from Sackatoo. This town is situated 13° 4′ 50″ north lat. and 6° 12′ east long. It is the most populous which Clapperton saw in Africa, though only twenty years have elapsed since its foundation. Clapperton's visit to it is likely to be attended with the most important results, as in consequence of an arrangement which he made with the sultan he has already gone out by way of Benin upon a second mission, most probably empowered by our government to enter into arrangements of a permanent nature. We may, therefore, look forward to fresh discoveries in northern and western Africa, of a more interesting character; and we do feel not a little proud in believing that the extension of British influence in that quarter will be followed by the utter destruction of the slave-trade, the first great step in the civilization of millions who have hitherto been unknown to Europe.

For the Port Folio.

LITERARY AND MISCELLANEOUS INTELLIGENCE.

It is stated in a Boston paper that the renegado Paine, shortly before the close of his wretched career, committed to the care of Mr. Jefferson, to be used as he might think proper, a work in Ms. entitled "the Religion of the Sun." We cordially unite with the editor of one of our Philadelphia papers in condemning any thing of that description, from such a source, to the hands of the common hangman. There is, extant, a very sensible letter from Dr. Franklin to this blasphemous and malevolent vagabond on the subject of one of his irreligious performances which the Doctor advised him to suppress.

A gentleman connected with captain Partridge's seminary in New England proposes to publish a collection of American speeches in fifty octavo volumes!

In the "Memoirs of the Prince of Montbarey" who was minister of war in 1779 to Lewis XVI, we find that Statesman asserting "that France was secretly urging on the Americans to insurrection long before the revolutionary war actually broke out; and his reflections upon that contest, its causes and consequences, are," says the editor of the London

Literary Gazette, "neither very favourable to the Americans nor to their famous defender Lafayette." The book which is here referred to has not yet reached this country, and therefore we must take this representation of its contents from the flippant pages of the Gazette. It is not at all unlikely that the French government availed themselves of so favourable an opportunity to annoy an inveterate enemy as that conjuncture afforded; but the world has long ceased to question the causes of our revolution; and the consequences of that event are witnessed daily in the diffusion of knowledge and the increase of happiness. The "famous defender" of that glorious cause can now no longer be assailed by obloquy or suspicion. Whatever may be thought of his judgment on some momentous occasions, in his own country, no man of candour now ventures to impeach his motives. In an active career of half a century he has earnestly laboured to promote the best interests of his fellow creatures, and he enjoys, in his old age, a rich reward in the whispers of his own breast and the testimony of every wise and good man.

A premium of one hundred dollars is offered at Albany for the best essay or criticism on the different spelling books now in use. It will be awarded by governor Clinton; A. C. Flagg acting superintendant of the common schools and T. Romeyn Beck, M. D. principal of the Albany Academy. We trust that this may produce an investigation which is much wanted. The public has long been imposed upon by a mass of trash, under the name of *improved* books for the use of children, which is generally pushed into the market by the weight of certificates from prominent individuals inconsiderately or ostentatiously given. So little qualified are many of these *common vouchers* for the office which they thus assume, that we have heard of certificates in favour of a grammar which contained as many blunders as lines. One of these purported to be the joint production of two or three professors of colleges and half a score of M. D.'s—a portion of our community which appears to be always on the alert, when *names* are to be brought into public view. A particular description of the members of the bar have manifested, lately, a disposition to take a share in this business. Thus between a desire of notoriety on the one part, and of gain on another—both concealed under *a wish to improve the rising generation*—the public is abused—and the poor children, bewildered by various systems, become disgusted with all.

The celebrated *Gregoire*, bishop of Blois, has published an ingenious pamphlet on "The nobility of the Skin, or the Prejudice of the Whites against the colour of the Africans

and their Descendants, whether of pure or mixed blood." The Abbe argues his case with great force, and communicates much curious historical information on the subject of the blacks. He does not ask for their immediate emancipation, but he insists that, for our own sakes, they should be prepared for freedom. We believe that this would be about as unprofitable an undertaking as teaching an elephant to fly. These philanthropists had better occupy themselves in ameliorating the condition of this unfortunate class of beings by the inculcation of obedience and industry on the one hand and kindness and real policy on the other. The blacks in Philadelphia and New York, who have been brought to these cities, chiefly by the influence of mistaken benevolence, are nuisances, although they have had all the advantages of schools and churches, with black bishops to boot. As long as the whites and the blacks are inseparable, which we fear must always be the case, this prejudice, as the Abbe terms it, will be felt, and the *nobility of the skin* truly asserted. Wo betide the land where

> Black spirits and white, blue spirits and gray
> Mingle, mingle, mingle, as they mingle may."

The great mystery, respecting the *Man in the Iron mask* has recently been solved by a publication, bearing this title (in French.) This person is shown to have been a confidential agent of the duke of Mantua, who had given offence to Louis XIV.

A writer in the last Quarterly Review has depicted the character of Washington with force and brevity, when, in speaking of Chantrey, the celebrated sculptor he says,—" of his erect figures, WASHINGTON is our favourite; the hero of American Independence seems the very personification of one wrapt in thought—*a man of few words and prompt deeds*, WITH A MIND AND FORTITUDE FOR ALL EMERGENCIES."

" *The Boyne Water*," republished in New York from the English press, is another imitation of the Waverley tales, and though it comes from the pen of a writer of great powers as a novelist, it must be pronounced a servile copy. The scene is laid in Ireland, and the time selected is one of the most memorable periods in the annals of that wretched country. It is a highly coloured narration of the struggle between the partizans of James II, and William III; and the author has introduced many of the most conspicuous personages of that day into his canvas with singular freshness and individuality.

He disclaims all design of kindling or perpetuating the civil and religious discussions which belong to this subject; but if conciliation be his object, it is not to be attained by such

a performance as this is. The mild and even amiable character which he gives to James II, and the proposition in his preface that "Englishmen have ceased to attribute to the deposed monarch such civil tyranny, and such plotting against their religion, as his hostile cotemporaries found it politic to lay at his door," evince that he writes under a strong bias altogether at variance with the impartiality which he assumes. The subject will always be debateable ground, which might be left to the zealots of party; at any rate we should wish to keep from it a writer who has shown such capacity to amuse, when he draws from the stores of his own fancy. This is abundantly displayed in his "Tales by the O'Hara Family," which describe the eccentricities of the Irish people with admirable effect. As we have intimated, we feel no desire to enter into the political disquisitions which form the main design of this work, and the plot is so simple as to be scarcely worth explanation. The interest arises from the double attachment of a young protestant and his sister and a young catholic and his sister, which is interrupted by the civil war of 1685, in which the gentlemen espouse opposite sides. The mutual reserve which they preserve as to their political engagements, at the moment when they are bound by the ties of friendship and joyfully anticipating a closer connexion, is unnatural. But if we had not something unnatural in the beginning of a love tale, to throw matters out of order, novelists would be confined to the dull details of a matrimonial fireside or the still more dismal din of the nursery: either of which alternatives a genuine novel reader eschews. Scenes of powerful interest arise out of the conflicting feelings and duties of the several parties, in this novel, of the which author avails himself with skill and success. The preparations for the nuptials in the castle of lord Antrim, may be cited; and also that in which the bloody Galmoy order Edmund and Evelyn,—the two heroes of the tale—to be shot. But we shall not follow the author into these details. We have spoken of the servility of the imitation. The reader will recognize in the crazy sybil, Onah, his old acquaintance, Norna of the Fitful Head—Eva M'Donnell is a full cousin to Flora M'Ivor and Diana Vernon—Evelyn and Waverley belong to the same family. The battle between the reverend bruisers, Walker and O'Haggerty, would not have been fought if Bothwell and Burley had not set the example; nor would Evelyn have suspected that his mistress had put on a pair of inexpressibles to seek revenge for his supposed perfidy, if Roland Græme, had not in the same manner, mistaken the brother of Catharine Seyton for the fair damsel herself.

THE HERO'S ORPHAN GIRLS.

A BALLAD. BY MR. C. F. WEBB.

Oh lady! buy these budding flowers,
For I am cold, and wet, and weary;
I gathered them ere break of day,
When all was lonely, still, and dreary;
And long have sought to sell them here,
To purchase clothes, and food, and dwelling,
For Valour's wretched orphan girls—
Poor me, and my young sister Ellen.

Ah, those who tread life's thornless way,
In Fortune's golden sunshine basking,
May deem that Misery wants not aid,
Because her lips are mute—unasking;
They pass along—and if they gaze,
'Tis with an eye all hope repelling—
Yet once a crowd of flatterers fawn'd,
And fortune smiled on me and Ellen.

Oh, buy my flowers! they're fair, and fresh
As mine and Morning's tears could keep them—
To-morrow's sun will view them dead,
And I shall scarcely live to weep them;
Yet this sweet bud, if nursed with care,
Soon into fulness would be swelling—
And nurtured by some generous hand,
So might my little sister Ellen.

She sleeps within a hollow tree,
Her only home—its leaves her bedding;
And I've no food to carry there,
To sooth the tears she will be shedding!
Oh that those mourners, gushing griefs—
The pastor's prayer—and bell's sad knelling—
And that deep grave, were meant for me
And my poor little sister Ellen!

When we in silence are laid down,
In life's last, fearless, blessed sleeping,
No tears will dew our humble grave,
Save those of pitying Heaven's own weeping;
Unknown we live—unknown must die—
No tongue the mournful tale be telling
Of two young, broken-hearted girls—
Poor Mary and her sister Ellen!

No one has bought of me to-day,
And night-winds now are sadly sighing;
And I, like these poor drooping flowers,
Unnoticed and unwept am dying;—
My soul is struggling to be free—
It loathes its wretched, earthly dwelling;
My limbs refuse to bear their load—
Oh God, protect lone orphan Ellen!

ON THE PORTRAIT OF A YOUNG LADY.

BY MISS RUSSELL MITFORD.

See fairest among many fair,
Yon graceful maid with smiling air,
And cheek as bright as summer even!
Warm from the dance she seems to spring;
And the light gales above her fling,
Her silken scarf in floating ring,
Like rainbow in th' autumnal heaven.
One snowy arm she lifts to bind
The dark curls sporting in the wind;
And one half raised as if to fly,
With fairy foot keeps equal measure:
Joy sparkles in her radiant eye;
Her light form seems to bound on high;
And motion snatches grace from pleasure.

Such the fair form—the fairer mind,
'Tis not in painter's art to bind.
That form with ever-changing grace
Flits like the borealis race,
In variable spell;
That mind like planet star we trace,
Bright and unchangeable,
In its own time its course to run
And Virtue the light-giving sun.

Ill it beseems the playful Muse
Such grave unwonted theme to choose;
She better loves her darts to try
At the wide mark of prophecy.
Imp with gay plume, the wings of time,
And deal her spells in careless rhyme.

Her magic wand, my maiden fair,
Has chang'd that sylph-like bounding air

To matron softness, claim yet free,
Just such as ten years hence 'twill be.
She would not one dark ringlet shred,
Nor fade one tint of native red;
Nor steal one lightening-beam that flies
Warm from expression's all—thine eyes;
Nor rob thee of the smiles that dart
From kindness' better home—thy heart.
But with those glossy locks she'd chaim
One wedded follower to thy train;
Those native blushes still should flow
As brightly on their bed of snow,
But one alone should bid them glow:
Those powerful glances still should melt
Though only one their influence felt;
Those smiles their sweet enchantment send
To charm the husband and the friend.

Bertram House, 1811.

[Sir Philip Sidney,—a name that will ever be associated with all that is romantic in chivalry, unsullied in honour, and exquisite in taste—in conjunction with his sister, Mary Sidney, Countess of Pembroke, completed a translation of the Psalms, of which it is not too much to say, that it contains more of the genuine spirit of poetry, than all the other translations put together. We offer a few extracts in support of what has just been affirmed. The spelling is modernized.]

Nigh seated where the river flows
That watered Babel's thankful plain;
Which then our tears in pearled rows,
Did help to water with their rain;
The thought of Sion bred such woes,
That, though our harps we did retain;
Yet useless and untouched there
On willows only hanged were.

Now, while our harps were hanged so,
The man whose captives there we lay,
Did on our griefs insulting go,
And more to grieve us thus did say;
"You that of music make such show,
Come, sing us now a Sion lay."
"O no, we have nor voice nor hand
For such a song in such a land."

Though far I lie, sweet Sion hill,
In foreign soil exiled from thee,
Yet let my hand forget its skill
If ever thou forgotten be—
Yea, let my tongue fast glued still
Unto my roof lie mute in me,
If thy neglect within me spring,
Or aught I do but Salem sing!

Never was the affecting penitence of David, more accurately and faithfully expressed than in the following:

PSALM LI.

O Lord, whose grace no limits comprehend,
  Dear Lord, whose mercies stand from measures free,
To me that grace, to me that mercy send,
  And wipe, O Lord, my sins from sinful me,
  O cleanse, O wash, my foul iniquity.
Cleanse still my spots, still wash away my stainings,
Till stains and spots in me leave no remainings.

My mother, lo! when I began to be
  Conceiving me, with me did sin conceive,
And, as with living head she cherished me,
  Corruption did like cherishing receive,
  But lo! thy love to purest good did cleave;
My inward truth, which hardly else discerned,
My forward soul in thy hid school had learned, &c.

Where is the translation of that exquisite passage in Psalm 139, that can equal the following?

To shun thy notice, leave thine eye
O whither might I take my way!
  To starry sphere?
  Thy throne is there.
To dead men's undelightful stay?—
There is thy walk—and there to lie
Unknown, in vain I would assay.

O sun, whom light nor flight can match,
Suppose thy lightful, flightful wings
  Thou lend to me,
  And I could flee
As far as thee the evening brings,
Even led to west, he would me catch,
Nor should I lurk with western things.

Do thou thy best, O secret night,
In thy sable veil to cover me;
Thy sable veil
Shall vainly fail.
With day unmasked my night shall be
For night is day, and darkness night,
O Father of all lights to thee.

ROBERT BURNS.

The following beautiful stanzas on the Scotish Poet, were written by Montgomery on occasion of the anniversary of Burns' Birth-day, being celebrated at Sheffield, 8th March, 1820. As they have not appeared in any edition of his works, our readers will, no doubt, be gratified by seeing them preserved in the Port Folio.

What bird in beauty, flight, or song,
Can with the Bard compare,
Who sang as sweet, and soar'd as strong,
As ever child of air?

His plume, his note, his form, could BURNS,
For whim or pleasure change;
He was not one, but all, by turns,
With transmigration strange:—

The Blackbird, oracle of Spring,
When flow'd his moral lay;
The Swallow wheeling on the wing,
Capriciously at play:—

The Humming-bird from bloom to bloom,
Inhaling heavenly balm;
The Raven, in the tempest's gloom;
The Halcyon, in the calm:

In 'auld Kirk Alloway,' the Owl,
At witching time of night;
By 'bonny Doon' the earliest fowl,
That carol'd to the light:—

He was the Wren amidst the grove,
When in his homely vein;
At Bannock-burn the Bird of Jove,
With thunder in his train:—

The Woodlark, in his mournful hours;
The Goldfinch in his mirth;
The Thrush, a spendthrift of his powers,
Enrapturing heaven and earth.

The Swan, in majesty and grace,
Contemplative and still;
But roused,—no Falcon in the chase
Could, like his satire, kill:—

The Linnet, in simplicity;
In tenderness the Dove:
But more than all beside, was He
The Nightingale, in love.

Oh! had he never stooped to shame,
Nor lent a charm to vice,
How had Devotion lov'd to name,
The Bird of Paradise!

Peace to the dead!—In Scotia's choir
Of minstrels, great and small,
He sprang from his spontaneous fire,
The Phœnix of them all!

OBITUARY.

Died 3d Aug. at Philadelphia, *Henry Ewing*, aged 23.

At Richmond, Va. cæt. 23, *Joseph Y. Lisle*, eldest son of John Lisle of Philadelphia. These two individuals were classmates, and equally distinguished for the gentleness of their manners and their high sense of moral obligation.

"God gives his favourites early graves."

18th. At Burlington, N. J. *Bloomfield M'Ilvaine*, of Philadelphia, Attorney at Law. With manners singularly attractive, an openness and candour of disposition calculated to win the esteem of even a casual acquaintance—to those with whom he was connected by the ties of professional interest or personal regard, his death is peculiarly an object of regret. As a young man, his career was that of a diligent and persevering student; as a lawyer, his path was that of strict adherence to honourable precept; and his success such as high intellectual endowments and indefatigable industry always secure. Under the same roof with a dying parent, whose sufferings excited in his bosom the most anxious solicitude in the midst of his own, he sank quietly to rest a few hours before, in the order of Providence, that being was summoned to whom he owed his existence.—The members

of the Bar of Philadelphia and those of the Law Academy, united in the usual testimonials of respect for his memory.

Joseph M'Ilvaine, father of the individual just named, died on the same day, as just intimated. He had long been regarded as one of the most eloquent and efficient lawyers, at the bar of New Jersey. For many years he had borne the office of District Attorney for that state, and, at the period of his demise, he was a Senator in the Congress of the United States.

For the Port Folio.

ABSTRACT OF PRINCIPAL OCCURRENCES.

August, 1826.

Maine.—The amount of bills in circulation, in June 1825, returned by the banks, was $1,029,272; in January 1826, $657,581; and, omitting those of the Kennebunk bank, in June 1826, $552,252. The Kennebunk bank has been embarrassed in consequence of the directors having borrowed from it more than they were able to pay.

New Hampshire.—A heavy rain having loosened the soil on one of the mountains, a mas descended with rapidity, accumulating as it rolled, and carrying with it hundreds of trees and other obstructions, and spreading in width as it moved. It needed only to have been mixed with a molten mass, to have resembled the lava of a volcano. It ran half a mile to the valley, where it formed an almost perpendicular embankment, about 12 or 14 feet high. It paused near the bank of the river. If it had continued it would have dammed it up to a considerable height, and probably caused great destruction when the water broke the barrier. No person or building was injured.

Massachusetts.—There are 44 places of public worship in Boston, including 5 missionary chapels, one school house. The Unitarians have 12, the Trinitarians 25, the Universalists 3, Catholics 2, Christians 2.

The attempt to raise a fund by voluntary subscription in Boston, for Mr. Jefferson, entirely failed.

It appears from the returns from 128 towns in this state, that the amount paid for public instruction is $163,929, and the number of scholars 71,159. The amount of private tuition fees in the same towns is $158,809, and the number of scholars in private schools 18,143. The sum paid for public instruction is about $2,30 for each scholar.

A *Gymnasium* for *ladies* has been established in Boston. The New York Times suggests that "if this kind of education becomes general, it will be necessary that the militia should be more strictly disciplined, and strengthened by numbers and frequent drilling.

Rhode Island.—The circulation of the banks in May 1825, was $1,021,599; which was reduced to $832,621 in May, 1826.

Connecticut.—The Asylum for the Deaf and Dumb, at Hartford, contains 115 scholars. The males devote part of the day to the acquisition of trades. Those who enter under legislative patronage, are generally sent for the term of four years.

New York.—Very great excite-

ment prevails in New York in consequence of various Bills of Indictment having been found by the grand jury against several individuals, who have always occupied a high standing in the commercial world, and who appear to have subjected themselves to responsibilities, unpleasant at the least, in consequence of their situations as Directors, &c. The evils arising from the facility with which charters were obtained for companies merely for the purpose of speculating on the credulity of the citizens generally, begin now to develop themselves. A few individuals have drawn ample sums from the pockets of the community, while the widow and the orphan have been bereaved of their support.

Some idea of the increase of travelling may be formed from the fact that the steam-boat Constitution from Albany, brought one day to New York, 450 passengers, and the Thistle from Brunswick, (Philadelphia line) brought 500. The passage money would amount to about $2000.

Pennsylvania.—Mr. Koch, in the neighbourhood of Greensburgh has a horse, still serviceable, between 30 and 40 years age.

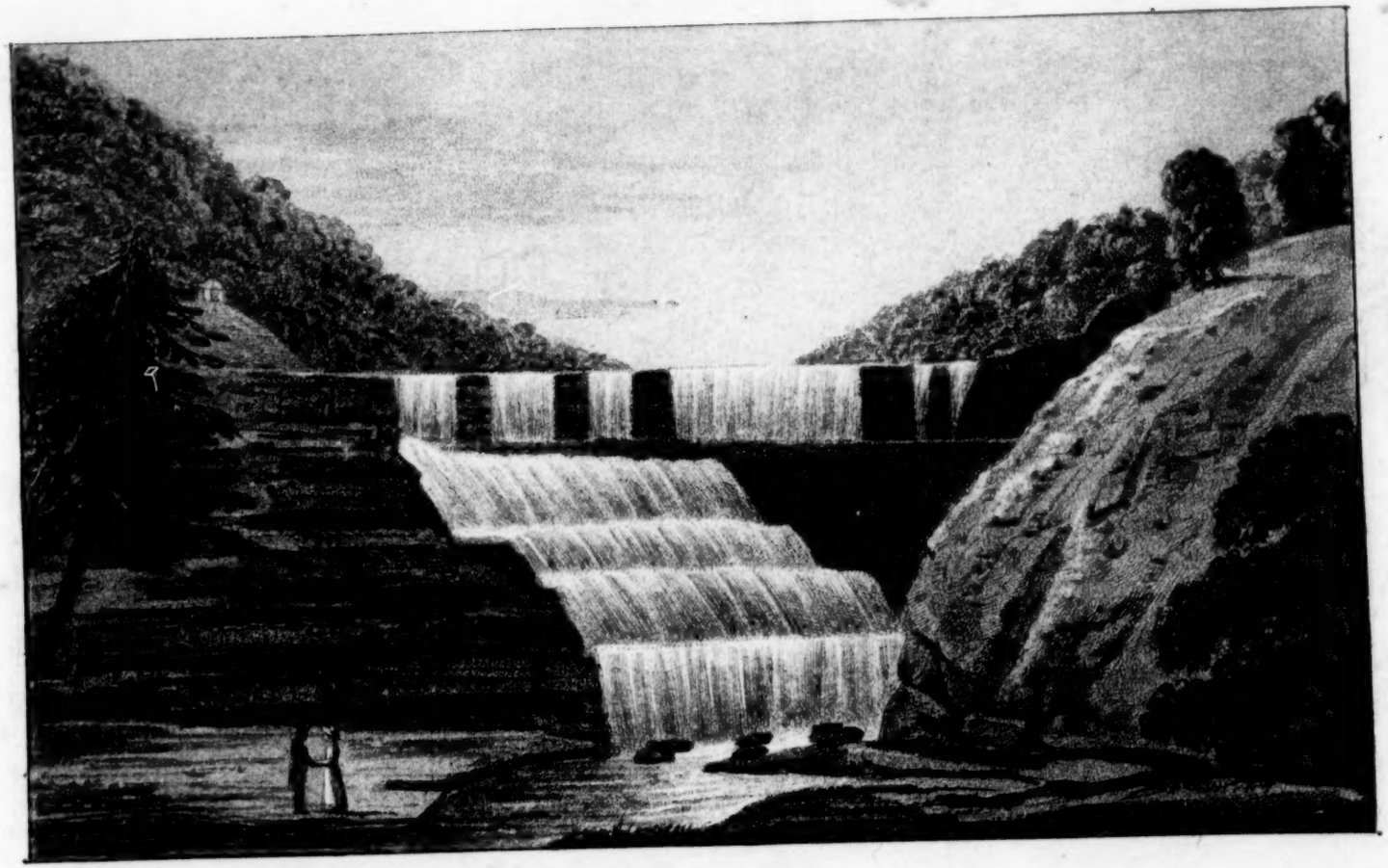
Three years ago the site on which the village of Erie stands was a wilderness and the path of the Indian, the only path for the adventurous traveller. Now it has upwards of 1000 inhabitants, and the roads leading to Buffalo, Cleaveland and Pittsburgh, the three points of intercourse, equal to any in the western part of the Union. From these three places there are twenty-seven arrivals of stages at Erie, every week, all of which remain there for the night. From Buffalo there are fourteen arrivals; from Cleaveland, ten; and from Pittsburgh, three: three years ago there were only three arrivals altogether; once a week from Cleaveland in a one-horse wagon, and once from Pittsburgh in a hack. Now there is not a vehicle, for the conveyance of travellers, enters Erie, but post-coaches, with teams equal, if not superior, to any in Pennsylvania. In addition to these there are three steam-boats, and from two to ten schooners which enter and clear out every week.

Ohio.—They exhibit, at Cincinnati, a collection of bones of some non-descript animal, one of which is said to be 20 feet long, 3 feet wide, and weighing upwards of 1200 lbs. The ribs are said to be 9 feet long, and the other bones of the same proportion.

Louisiana.—Mr. Loiseau, of New Orleans, has discovered a remedy for drunkenness, which he considers a disease.

TO READERS AND CORRESPONDENTS.

We beg leave to call the attention of our patrons to the embellishment of the present number. Wilson's Ornithology is now very scarce, and the price of it is so high that few can afford to purchase it. We propose to select from it, from time to time, the most striking descriptions and to accompany them with coloured engravings, according to the specimen exhibited in this number. It is necessary, however, to add, that the expense will require an augmentation of our subscription list, to effect which we ask the assistance of those who are friendly to the undertaking.



TRENTON FALLS.